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Table 1: Range of Cigarette Design Parameters

Cigarette Features	Number / Type	Ranges
Brands	15 Brand Families	48 Brand Styles
Regions (1)	6	USA, Latin America, Asia Pacific, Japan, EU, CEMA
ISO "Tar"		1 - 14 mg/cig
Filter Types (2)	6	Cellulose acetate (CA), CA/carbon (three types), Concentric paper
Filter Ventilation		0 - 80%
Cigarette Length	7	68 - 100 mm
Cigarette Circumference	2	Slim (~ 23 mm) and Standard (~ 25 mm)
Cigarette Paper Permeability (3)		9 - 87 CORESTA Units
Menthol Flavoring	2	5 menthol, 44 non-menthol
Tobacco Weight		0.49 - 0.89 g/cig
Tobacco Blend	2	Approximately 100% Virginia (bright) or Blends of bright, burley, Oriental tobaccos
Packaging	2	41 Hard Pack, 7 Soft Pack

<sup>(1)</sup> EU = European Union, CEMA = Central Europe, Middle East, Africa

<sup>(2)</sup> CA = cellulose acetate, CA/Carbon is a filter containing both a CA section and a section with carbon on CA

<sup>(3)</sup> CORESTA Unit (CU) = air flow, cc/min, passing through a 1 cm<sup>2</sup> test apparatus surface at 1.0 kPa pressure

Table 2: Health Canada Test Methods for Mainstream Smoke and Whole Tobacco

Mainstream Smoke Constituents	Health Canada Official Methods
"tar", nicotine, carbon monoxide	T-115
<u>Carbonyls</u> formaldehyde, acetaldehyde, methyl ethyl ketone (MEK), acetone, propionaldehyde, acrolein, crotonaldehyde, butyraldehyde	T-104
Volatile Organics 1,3-butadiene, isoprene, acrylonitrile, benzene, toluene	T-116
Phenolics hydroquinone, resorcinol, phenol, catechol, o-cresol, m & p-cresols	T-114
Aromatic Amines 1- and 2-aminonaphthalene, 3- and 4- aminobiphenyl	T-102
nitric oxide (NO), total oxides of nitrogen (NOx)	T-110
hydrogen cyanide	T-107
ammonia	T-101
benzo[a]pyrene	T-103
pyridine, quinoline, styrene	T-112
Tobacco Specific Nitrosamines N-nitrosonornicotine (NNN), 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK), N-nitrosoanatabine (NAT), N-nitrosanabasine (NAB)	T-111
Mercury	T-108
Metals cadmium, lead, chromium, nickel, arsenic, selenium	T-109
рН	T-113
Whole Tobacco Constituents	***************************************
Nitrate	T-308
Tobacco Specific Nitrosamines N-nitrosonornicotine (NNN), 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK), N-nitrosoanatabine (NAT), N-nitrosanabasine (NAB)	T-309

Samula		"tar	•	nicoti	ne	carbon m	enoxide	acetalde	hyde	acetor	1e	acrole	ain	butyrald	chyde	crotonale	dehyde	methy) eth	yl ketone	propiona	lideyde
Sample Code	Brand / Region (1)	(mg/c		(mg/c		(mg/		(ug/ci	•	(ug/ci	g) '	(ug/ci	ig)	(ug/s	:lg)	(ug/c	cig1	(ug/c	ig)	lug/c	ág)
					SD	Average	ŞD	Average	\$D	Average	SO	Average	SD	Average	ŚD	Average	SD	Average	SD	Average	60
	Exploratory Brand Set	Average	\$D	Average			0.5	598	5	330	12	57.6	3.0	40.B	2,1	23.3	0.9	74.5	3.7	59.3	2.8
Ë)	L&M King FHP/EU	12.6	0.6	0.81	0.03	1f.5	0.49	384	20	224	5	35.8	2.1	25.8	1.5	10.0	1.1	46.1	1.9	36.4	2.7
	Merit King FHP / EU	7.04	0.41	0.54 0.93	0.03	8.12 11.3	0.49	540	85	287	34	51.0	7.7	33.9	5.2	19.5	3.2	65.6	8.9	50.2	7.1
	Mariboro King F HP (Norway) / EU	13.2	0.7			3.40	0.18	148	10	108	5	12.5	0.9	11.4	0.7	NO	NO	17.6	0.9	14.3	1.3
	Chesterfield INTL King F HP Ultra-Lt / EU	3,39	0.23	0.30	0.01 0.04	10.2	0.78	409	41	201	29	31.4	5.9	20.9	3.0	6.56	1.31	31.8	5.8	33.6	5.0
	Parliament 100 F SP / ÇEMA	10.2	0.4	0.77		1.99	0.16	75.7	12.1	65.0	7.5	5.38	1.10	6.16	1.13	CM	NQ	7.99	1.51	7.07	0.91
	Philip Marris One King F HP / EU	1.55	0.22	0.16	0.01 0.04	13.4	0.10	626	36	344	13	61.9	3.6	40.3	1.8	24.9	1.6	76.4	4.7	59.5	1.9
	Marlboro Long Size F HP (Argentina) / Latin America	13.9	0.5	1.00 0.57	0.03	7.46	0.29	218	41	117	24	14.8	2.7	11.0	1.8	NQ	NO	16.6	3.7	15.8	3.3
	Parliament King F HP Lt (Japan) / US Export	6.99 8.35	0.35 0.42	0.58	0.03	B.42	0.24	397	21	220	8	35.6	1.9	26.0	1.8	10.9	0.9	45.1	1.9	36.1	1.9
E9	LAMKing FHPLI/EU	13.1	0.42	0.50	0.05	11.1	0.7	504	68	276	33	45.7	6.0	32.2	3.8	17.8	3.5	59.3	7.6	48.2	5.5
	Mariboro Long Size F HP (Venezuela) / Latin America		0.9	0.93	0.05	9.63	0.63	384	46	203	22	32,1	3.8	21.9	2.8	7.97	1.40	37.2	5.0	33.3	3.3
	Marlboro King F HP (Talwan) / US Export	11.6 8.37	0.37	0.93	0.04	8.58	0.43	363	53	209	20	33.0	5.3	25.3	2.9	10.1	1.6	48.2	4.7	34.1	3.5
	F6 King F HP Lt / EU	0.884	0.146	0.10	0.01	1,14	0.10	32.4	11.9	46.5	6.1	NO	NO	NO	NO	BDL.	BDL	NO:	NO	NO.	NQ
E13	Virginia Stims 100 F HP Menthol Ting (Japan) / US Export	5.94	0.140	0.10	0.03	6.38	0.24	323	43	182	13	30,1	4.2	21.4	2.6	6.98	1.13	36.3	3.6	30.7	3.5
	Marlboro King F HP Lt (Germany+Great Britain) / EU	2.75	0.24	0.23	0.02	3.12	0.30	114	25	96.4	17.4	8.71	2.14	8.80	1.83	NO	NQ	13.3	3.0	11.0	2.0
	Virginia Slims 100 F HP Ultra-Lt Menthol (Japan) / US Export	11.6	0.6	0.23	0.02	11.4	D.6	481	29	239	10	38.5	2.8	26.1	1.8	8.76	0.90	44.0	2.6	41.0	3.4
	Parliament 100 F SP Lt / US	14,2	0.5	1.02	0.03	12.9	0.6	601	43	318	12	55.4	5.8	39.7	3.6	20.1	2.4	71.7	6.3	55.7	4.6
	Marlboro King F SP / US	12.6	0.5	0.93	0.04	11.6	0.6	554	33	291	18	51.3	3.4	35.8	2.5	17.4	1,4	67.3	5.1	51.5	3.0
	Meribare 100 F HP / EU	6.92	0.23	0.63	0.02	7.05	0.43	311	39	178	14	27.5	4.7	19.5	2.3	5.98	1.09	34.4	3.5	28.6	3.4
E19	Mariboro 100 F HP Lt (Germany) / EU	11.1	0.5	0.67	0.02	9.15	0.44	488	45	267	22	44,3	4.7	33.7	2.3	20.5	1.8	61.8	4.6	47.0	4.5
	SG Ventil Regular F SP / EU	0.972	0.184	0.11	0.01	1.27	0.08	57.2	11.1	59.3	8.5	3.5B	0.67	5.44	0.81	NO.	NO	6.61	0.84	5.69	0.63
	Muratti King F HP Ultra-Ut 1mg / CEMA	9.65	0.34	0.74	0.03	8.78	0.28	390	63	223	26	39.1	8.1	27.7	4.5	13.9	2.4	48.7	7.2	39.2	5.6
	Diana King F SP Specially Mild / EU	8.38	0.40	0.65	0.05	7.49	0.37	288	43	146	22	19.7	3.7	15.4	1.9	4.92	0.93	24.7	4.0	23.6	3.4
	Muralti Ambassador King F HP / EU	4,92	0.22	0.45	0.03	5.91	0.25	254	50	165	28	20.4	4.7	19.5	3.9	5.82	1.65	31.1	6.1	25.0	4.6
	Merit King F SP Ultra-Lt (PaperSelect) / US	13.3	0.6	0.85	0.03	11.2	0.4	515	71	287	34	43,8	6.1	37.6	4.3	20.7	3.5	69.7	9.0	49.2	6.4
	Petra Regular F HP / CEMA Moriboro Kino F HP Ultra-Lt Menthol / US	5.86	0.47	0.49	0.04	6.92	0.40	277	48	170	25	25.7	4.0	20.5	3.6	6.71	1.56	33.0	5.4	25.9	3.5
E27	Diana King F HP Ultra-Lt / EU	3.03	0.16	0.29	0.02	3.32	0.24	146	16	103	12	13.0	2.0	10,9	1.2	NO	NO	16.8	2.0	14.6	1.8
E28	Maziboro King F HP (Malaysia) / Asia Pacific	14.4	0.5	1.03	0.04	11.9	0.7	604	28	316	19	58.7	3.5	43.6	3.5	23.3	2.1	89.2	5.1	60.4	3.5
	Mariboro King F HP 25's (Australia) / US Export	13.1	0.0	0.98	0.05	12.3	0.9	517	45	291	29	47.4	3.6	36.2	4.5	17.6	2.7	62,6	6.9	49.7	3.6
E30	Mariboro King F HP (Japan) / Japan	12.1	0.5	1.04	0.05	11.2	0.6	481	31	257	14	36.6	2,8	23.9	2.2	9.17	1.12	46.2	3.9	39.5	2.6
E31	Longbeach One King F HP / Australia	1.22	0.14	0.15	0.02	1.64	0.14	113	19	95.8	7.0	8.71	1.49	8.18	0.97	NO	ΝQ	15.0	2.4	11,1	1.7
	Chesterfield Orloinals King F HP LL/ EU	7.98	0.45	0.59	0.02	8.35	0.43	432	42	243	19	41.3	3.1	27.0	2.5	12.4	1.1	51.7	5.1	40.4	3.0
	Philip Morris 100 F HP Super Lights / EU	3.31	0.29	0.33	0.02	3,53	0.19	t61	11	115	10	13.0	1.0	12.2	0.7	NO.	NO	19.4	2.2	14.9	1.2
	Chesterfield Originals King F HP / EU	11.9	0.5	0.80	0.04	11.7	0.7	588	36	319	19	57.0	3.7	36.8	2.6	22.6	2.3	74.7	5.9	53.5	4.2
	Meriboro King F HP Medium / EU	9.62	0.39	0.72	0.03	10.0	0.7	458	36	262	15	41.2	2.6	29.2	1.4	13.5	0.9	57.9	3.5	42.9	3.B
	Virginia Slims 100 F HP Ultra-Lt Menthol / US	5.13	0.29	0.45	0.02	4.90	0.33	207	34	139	17	20.5	3.7	14.4	1.8	4.61	1.01	24.6	3.9	20.0	2.4
	Martboro King F HP Ultra-Lt / EU	3.04	0.22	0.29	0.01	3.49	0.12	150	5	105	7	11.8	1.0	10.4	0.7	NO	NO	18.5	0.9	14 0	1.1
	L & M King F HP (Malaysia) / Asia Pocific	13.5	0.4	1.01	0.03	10.4	0.3	591	53	292	15	57.2	6.3	39.3	3.5	21.8	2.4	64.3	4.6	54.6	4.7
	Mariboro King F RP Lt (Japan) / Japan	5.87	0.26	0.44	0.02	6.77	0.40	227	22	126	13	16.7	2.2	11.0	1.0	NQ	NQ	17.B	2.3	18.2	2.5
	Validation Brand Set																				
V1 1	Marlboro King F HP Lt (Norway) / EU	8,34	0.41	0.69	0.04	8.53	0.38	363	41	201	17	30.8	4.6	24.7	3.7	10.9	1.7	41.8	4.2	32.8	3.9
	Raffles 100 F HP / EU	12.3	0.5	1.19	0.10	12.8	0.7	643	40	335	18	80.3	4.5	47.5	3.3	28.3	2.9	78.0	6,1	56.4	3.3
	Chesterfield King F HP Lt / EU	8.25	0.23	0.54	0.04	7.27	0.34	319	17	176	10	27.6	1.5	20.9	1.5	8.86	1.10	34.5	2.8	13.8	1.7 1.6
	Philip Morris King F HP Super Lights / EU	4.13	0.39	0.40	0.03	4,05	0.31	147	16	96.5	8.8	12.1	1.6	11.4	1.2	NQ	NQ	15,9	1.7	1	1.0
	Marit King F SP Ultima (PaperSelect) / US	1,32	0.23	0.13	0.01	2.43	0.14	129	13	86.68	5.4	9.75	0.81	10.2	1.8	NQ	NQ a.e	13.4	1.1	11.8 42.6	4.5
V6	Mariboro 100 F HP Lt / US	9.58	0.40	0.80	0.05	10.7	0.3	461	61	262	30	42.6	8.4	33.1	4.2	15.8	2.6	53.9	6.1		2.6
	Peter Jackson King F HP Menthol / Australia	7.40	0.37	0.72	0.06	8.34	0.39	395	31	224	15	39.9	3.2	27.0	1.6	16.5	1.9	48.4	3.5	35.4	4.3
	Mariboro King F HP (Mexico) / Latin America	13.2	0.5	1,13	0.06	12.1	0.5	520	49	298	26	50.7	5.3	35.7	3.2	22.8	2.8	52.8	6.4	47,8	5.4
	Marlboro King F HP (Brazil) / Latin America	12.1	0.7	0.97	0.09	11.4	0.5	527	64	288	25	47.7	6.4	36.9	4.7	22.8	3.0	64,2	5.4	48.0	5.4
	Reference Cigarettes									,		T T		1 000		1 440		760	2.4	l cc o	5.6
BI	1R4F Kentucky Reference	9.14	0.36	0.73	0.04	11.6	0.6	574	57	312	22	46.3	4.8	38.8	3.6	14.9	1.5	75.0	6.4	55.9	
	1R4F Kentucky Reference	8.92	0.38	0.77	0.07	12.2	0.5	518	43	282	21	38.5	3.4	36.1	5.5	15.4	1,5	63.8	5.4	48.1	3.8

<sup>(1)</sup> Brand names are tradements of Philip Morris, Inc., Philip Morris Products S.A., Philip Morris Limited (Australia), Philip Morris CR. A.S., Tabaqueda, S.A., or F6 Cigarettenlabrik Dresden GmbH. De. (2) N-nitrosonomicotine (NNN), 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK), N-nitrosamalabine (NAT), N-nitrosanabasine (NAB)

<sup>(3)</sup> BDL = below the detection limit, NO = below the limit for quantitation

Consists	(mp) ald	obude.	000/60	strile	benze	ene l	1.3-buta	diane	isopre	ne	slyre	-08	tolue	1A	ammo	nia I	hydrogen	cvanide	nitric c	xide	nitrogen	oxides	1-aminona	phthalene	2-aminona	sphthalene
Sample Code	formald (ug/c	•	acrylor (ug/c		(ug/c		(ug/ci		(ug/ci		(ug/c		(ug/ci		(ug/d		(ug/c	•	(ug/c	cig)	(ug/c	cíg)	(ng.	/cig}	(ng/	/cig)
	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	ŞD.	Average	SD	Average	SD	Average	SD	Average	\$D	Average	\$D	Average	SD	Average	SD
E1	42.8	2.4	10.1	0.7	44.6	2.6	45.5	3.4	356	18	10.5	0.7	69.9	5.3	17.5	1.3	117	7	153	11	155	10	17.5	3.1	10.7	1.6
E2	20.9	3,4	6.92	0.49	32.8	1.4	35.4	1.7	295	13	5.24	0.31	48.7	2.7	11.2	1.0	61.5	4.5	141	14	145	17	11.6	1.0	7.61	0.72
E3	38.2	7.6	10.7	0.4	43.6	1.5	45.7	2.9	385	21	9.31	0.56	67.6	2.9	17.8	1.5	114	В	156	16	158	16	18.2	2.1	11.1	1.2
E4	6.73	2.07	2.77	0.27	17.5	0.7	17.9	1.4	150	11	2.51	0.28	24.2	1.8	5.64	0.47	13.4	2.0	59.1	4.9	60.7	5.3	7.76	1.15	4.74 11.9	0.72 1.7
E5	23.3	2.9	5.78	0.45	23.2	1.9	39.0	1.9	286	23	2.68	0.19	28.7	2.6	17.8	1.5	58.5	6.8	184	18	186 68.7	18 8.3	19.8 5.86	2.8 0.70	3.72	0.42
₹6	3.43	0.67	1.82	0.15	11.8	0.9	12.8	1.4	130	12	1.38	0.14	13.9	1.8	4.40	0.47	6.80 132	0.77 4	67.0	7.9 11	182	11	15.7	2.6	9.86	1.64
E7	52.1	5.2	11.3	0.7	44.1	2.1	48,5	2.8 0.8	475 195	34 10	10.2 1.85	0.7 0.30	66.0 20.5	2.6	16.2 12.7	1.8	28.7	2.9	161	14	182	14	14.8	1.2	9,45	0.53
E8 E9	10,8 24.8	1,2 4.8	3.58 7.04	0.38 0.29	15.1 34.7	1.3 1.3	23.9 34.6	1.4	271	11	5.88	0.61	52.3	2,4	11.5	1.7	58.3	4.5	115	15	117	16	13.8	2.1	8.63	1.22
E10	35.2	4.5	9.80	0.27	37.7	1,2	43.8	2.1	414	20	7.75	0.37	58.9	4.1	19.7	1.9	113	6	148	11	151	12	20.4	2.6	12.1	1.2
E11	24.1	5.9	5.89	0.42	26.6	1.B	36.4	0.7	313	17	3.37	0.39	97.2	3.2	22.2	0.9	99.5	7.1	231	26	239	26	21.4	2.3	13.4	1.7
E12	31.2	5.3	4.69	0.26	35.0	2.6	35.4	3.0	276	18	5.05	0.34	49.5	6.1	10.0	0.7	73.2	5.3	57.5	9.9	59.9	10.4	10.7	22	6.52	1.02 0.33
₹13	1,61	0.61	NO	NO	6.31	0.53	6.40	0.53	74.4	3.0	NO.	NO	NO	NQ	3.18	0.28	3.40	0.47	31.0	3.2	31.9	3.1	3.21	0.52 0.8	2.25 6.88	0.70
E14	22.1	6.7	3.71	0.29	25.9	1.1	30.8	1.6	270	<b>16</b>	3.37	0.30	35.6	3.0	9.27	0.59	45.6 15.4	4.4 1.7	78.1 80.5	16.0 13.5	80.9 83.1	14.8 14.2	8.85	1,66	5.61	0.78
E15	3.49	1.04	1,68	0.13	16.0	1.5	16.1	1.8	164 330	8 15	1.25 2.67	0.17 0.38	21.5 35.0	3.2 4.2	6.31	0.48 1.3	107	1.7 8	223	16	231	15	21.5	2.2	13,5	1.6
E16	29,9 33.0	6.7 8.6	10.0	0.34	26.2 45.2	1.9 3.1	37.7 50.8	1,4 3,1	484	31	883	0.73	68.8	5.5	25.9	0.6	194	13	242	14	254	15	22.5	4.1	13.8	2.1
E18	36.6	8.8	8.73	0.74	43.8	3,4	45.9	1.2	411	17	7.29	0.46	66.0	5.6	21.7	0.7	120	13	153	14	159	14	22.4	3.8	13.3	1.0
E19	13.5	3.0	4.82	0.60	30.2	2.5	31.9	1.8	299	17	3.72	0.42	41,2	4.9	10.4	0.2	51.0	2.9	86.8	8.8	89.9	9.6	14.9	2.2	8.88	1.55
ESD	41.7	5.3	8.19	0.65	31.8	2.2	35.2	2.9	281	15	9.42	0.84	47.0	3.6	12.7	1.2	107	7	81.1	10.8	84.9	11.2	13.7	2.4	8.46 3.39	0.79 0.46
E21	2,18	0.28	NQ.	NO	6.07	0.46	6.59	0.44	70.1	2.6	0.856	0.395	NO	NO	3.07	0.33	4.25	0.99	27.7	5.0	28.9 104	5.1 10	5.41	0.77 2.9	10.2	1.7
E22	24.3	4.8	8.33	0.54	37.6	2.2	36.8	2.4	313	21	B.65	0.55	55.2	3.3	12.9 11.7	1.3 1.1	99. <del>5</del> 42.7	7.1 3.9	101 54.7	9 3.0	57.0	2.9	16.6	3.6	10.0	1.5
E23	16.9	2.0	3.56	0.20	17.6	0.6	25.0 23.0	0.9 1.4	182 233	8 16	2.73 4.01	1.06 0.49	24.2 30.7	1.5 3.3	8.79	0.68	51,4	5.B	115	17	119	19	14.4	2.5	9.25	1.01
E24 E25	8.54 41.8	1.29 7.9	4.39 9.49	0.28	23.0 40.0	1.2 2.6	38.5	1.5	307	10	11.6	0.5	62.8	5.3	17.2	1.0	126	10	86.0	6.8	88.9	6.9	15.8	2.0	10.7	1.4
E26	9.72	1.65	5.36	0.25	28.2	1.2	28.2	1.6	270	13	3.74	0.68	37.5	2.0	10.9	0.6	84.2	3.2	137	8	142	8	16.0	3.3	10.5	1.4
E27	5.95	0.85	2.31	0.28	15.4	1.3	14,9	0.9	136	8	2,11	0.32	19,1	2.2	5.29	0.59	15.2	1.6	37.8	5.D	39.5	5.0	8.88	1.25	5.82	0.90
E28	28.1	2.4	11.7	1.2	44.1	4.5	43.9	2.2	403	30	11.6	1.2	65.6	7.9	29.0	1.1	185	9	216	23	226	24	27.0	3.2 3.4	17.2 15.2	5.9 2.2
E29	26.2	8.0	10.5	0.7	42.3	2.4	43.3	2.8	439	20	9,40	0.78	83.1	4.3	23.3	0.6	167	11	191 170	26 16	201 179	27 20	23.4	3.4	15.3	1.4
E30	29.4	2.0	6.14	0.40	24.5	1.4	36.1	1.3	278	13 6.5	4.26 1.66	0.57 0.46	34.2 14.5	2.8 1.6	16.8 NO	0.7 NO	77.5 5.82	8.6 0.72	13.2	1.8	13.2	2.6	4.43	0.71	2.90	0.41
E31	3.52	0.62 2.5	1.25 6.46	0.14	11.2	0.6 1.3	11,3 33.2	0.7 0.5	93.6 272	0.5 Β	4.60	0.40	44.7	2.3	12.0	0.4	62.1	5.0	91.2	11.2	95.9	12.2	14,8	1.1	10.1	0.4
£32 £33	21.2 6.23	1.06	2.61	0.32	16.7	0.9	17.2	0.5	156	5	2.47	0.42	22.7	2.9	6.31	0.23	16.2	1.6	59.9	11.4	62.3	12.1	11.2	0.7	7.80	0.43
E34	33.2	2.5	9.87	0.49	37.6	2,1	42.9	2.9	357	10	9.58	0.79	58.0	4.0	16.8	0.9	130	10	118	9	123	10	16.9	1.4	10.8	1.0
E35	26.7	1.1	6.88	0.36	33.0	1.6	34.4	1.0	284	в	6.22	0.57	50.5	2.8	13.9	0.9	90.4	8.2	123	12	130	13	16.7	1.4	11.8	1.0
E36	9.10	1.44	3.71	0.39	19.7	1.0	21.2	1.2	199	12	2.90	0.38	28.5	2.0	10.2	D.9	35.3	5.8	111 42.3	15 3.0	114 43.9	15 3.1	9.15	1.7 0.50	9.65 6.26	1.18 0.31
E37	5.50	0.60	2.16	0.09	14.7	0.6	16.1	0.9	150	6	2.13	0.47	19.4	0.7 2.4	5.35 20.4	0.49	13.6 151	1.1 12	179	18	188	3.1	25.8	3.9	16.7	1.5
E38	33.5	4.6	10.5	D.4	38.5	1.5 0.9	43.2 20.7	1.9 1.0	412 132	15 7	9,91 1.88	0.87 0.47	61.8 18.1	1.3	8.93	0.44	23.7	3.1	86.6	18.0	90.5	16.5	11.7	1.2	7.49	1.07
E39	14.1	2.1	2.44	0.16	12.8	0.8	20.7	1,0	102		.00.	V.41_	1. 10.1													
VI	19.D	3,5	7.43	0.61	30.7	1.9	35.0	2.1	291	10	5.91	0.62	47.8	3.6	14.0	1.0	68.3	3.7	106	10	113	10	15.6	1.3	9.80	1.09
V2	40.6	6.7	11,1	0.8	44.4	2.8	54.1	5.6	466	43	10.4	1.4	67.5	3.3	12.4	1.2	135	12	118	14	126	13	18,1	3.2	9.81	1.32 1.05
V3 :	17.3	1.9	5.50	0.24	25.4	1.5	29.3	2.6	244	21	4,56	0.68	36.2	2.5	9.69	1.37	52.8 23.3	5.5 2.6	62.3 53.3	6.6 5.9	67.0 56.3	7.4 5.5	12.6	2.0 0.6	7.51 6.89	0.43
V4	7.99	1.99	3.18	0.29	17.0	1.1	19.4	0.9	179	11 5	2,91	0,61 0.36	25.0 17.7	2.0	7.33 3.14	0.70 .0,46	19.4	1.9	45.2	7.7	48.3	8.0	4.30	0.73	2.66	0.36
V5	3.95	0.53	9.72	D.13 D.53	11.9 39.7	0.6 2.0	13.5 42.3	0.5 2.6	134 383	22	1.85 6.51	0.88	80.0	2.6	16.9	1.3	113	7	190	14	202	16	21.5	4.3	13.6	2.0
V6 V7	18.2 41.2	1.5 5.4	6.35	0.53	30.8	2.2	38.7	2.3	297	17	7.32	0.69	43.8	3.4	7.50	0.36	65.4	7.4	46.7	5.0	51.2	5.4	10.6	1.5	5.61	0.57
l vs	34.B	5.9	11.3	0.6	43.1	0.7	51.6	2.4	448	26	10.6	0.8	64.4	2.3	18.9	0.9	137	13	149	13	160	16	20.7	2.0	11,8	1.4
\ \A8	32,4	4.6	10.5	0.7	39.6	1.7	47.4	1.9	364	17	11,1	0.5	63.6	3.6	15.6	0.6	128	11	119	10	125	12	18.2	2.5	10.4	1.4
					· · · · · · · · · · · · · · · · · · ·						746	0.52		E 0	33.4	0.6	130	10	317	21	331	22	20.0	4.5	11.9	2.3
R1	26.4	7.3	8.30	08.0	40.5	2.6	42.8	3.3 2.3	397 342	19 27	7,10	0.22	65.2 61.2	5.0 5.4	13.4	0.5 1,0	121	11	283	25	296	25	18.4	1.4	11.7	0.5
R2	19.3	1.8	9.18	0.53	37.3	3.1	39.0	Z.J	392	21	7,73	0.55	01.2	0.4	199.1	1,10	I'E.I	- ''								

12/17/02

Sample	3 amino	biphenyl	4-amino	hinhanyl	benzo[a]	lowrene	çatêc	:bol	m & p-	cresols	o-cr	esol	hydrog	uinone	pher	nol	resor	rcinol	pyric	fine	quino	oline
Code		cig)	(ng/		(ng/c		(ug/c		(Ug)		(ug/	(cig)	(ug/	cig)	{ug/d	ig)	(ยสู/	(cig)	(ug/	cig)	(ug/	cig)
		SD SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD	. Average	\$D
E1	Average 2.69	0.28	2.12	0.28	10.5	1.1	55.6	2.2	11.8	0.6	4.34	0.22	67.2	2.1	16.8	1.2	1.14	0.11	13.1	0.7	0.38	0.03
E2	1.97	0.24	1.63	0.24	6.00	0.71	30.2	1.9	4.96	0.21	1.56	0.20	28.8	2.3	5.98	0.82	0.564	0.160	5.47	0.43	0.18	0.01
E3	2.59	0.21	2.08	0.25	11.0	1.0	50.0	2.1	10.0	0.6	3.49	0.38	54.1	2.5	15.0	1.8	0.879	0.104	12.5	8.0	0.34	0.02
E4	1.1B	0.11	U.969	0.052	3.32	0.33	16.9	1.1	1.97	0.15	0.751	0.115	1B.3	1.2	2.01	0.58	NO	NO	2.61	0.56	0.09	0.01
£5	2.78	0.34	2.12	0.20	8.47	0.92	44.5	2.1	8.81	0.17	2.21	0.11	45.9	8.0	8.40	0.53	1,04	0.13	2.99	0.32	0.25	0.01 0.00
E6 .	0.874	0.066	0.745	0.063	1.56	0.22	6.59	0.59	0.625	0.144	NQ	NQ	6.94	0.78	NO	NQ	BOL	BDL	1.19	0.19 0.9	0.42	0.03
E7	2.3B	0.18	1.85	0.16	9.74	1.04	48.2	3.6	] 10.7	0.4	3.85	0.19	49.5	2.5	15.0	1.4	1.04 NO	0,22 NO	2.36	0.43	0.17	0.01
£8	2.18	0.15	1,70	0.15	5.34	0.55	27.0	1.1	4.54	0.30	1.51	0.11	25.5	1.2	6.78 8.12	0.58 0.99	0.737	0.052	6.93	0.96	0.22	0.02
E9 ]	2.10	0.23	1.69	0.13	7.41	0.79	36.4	2.4	6.02	0.55	2.09 4.29	0.21 0.29	43.0 57.2	2.7 2.4	17.7	2.0	1.12	0.12	13.1	0.9	0.46	0.04
E10	2,72	0.16	2.09	0.05	8.91	0.95	50.8 56.3	3.8 1.7	12.1 12.8	0.4 0.3	4,29	0.14	50.0	1.3	19.6	1.4	1.10	0.09	5.33	0.69	0.38	0.03
E11	3.26	0.40	2.51	0.33	10.7	1.0		1.7 4.5	7,44	0.43	2.92	0.14	58.6	3.8	11.6	0.9	0.821	0.148	5.11	0.50	0.22	0.02
E12	1,71	0.20	1.26	0.13	8.92	1.36	60.1 5.12	0.24	NO.	NQ	NO.	NO	4.77	0.28	BDL	BDL	BDL	BOL	NO.	NO	BDL	BDL
E13	D.619	0.070 0.18	0.561	0.077	2.54 5.89	0.2 <del>6</del> 0.79	32.2	1.3	4.75	0.48	1.81	0.18	34.3	2.0	5.86	0.98	0.586	0.111	3.94	0.36	0.16	0.02
E14 E15	1.78 1.34	0.18	1.01	0.13	3.55	0.78	11.7	0.9	1,17	0.08	0.363	0.023	10.8	0.7	NQ	NO	NQ	NQ	1.11	0.24	0.03	0.00
E16	3.27	0.25	2.62	0.26	11.2	2.1	53.5	3.8	8.99	0.66	3.17	0.28	48.2	2.5	12.9	1.1	0.786	0,08-1	3.92	0.64	0.30	0.02
E17	3.20	0.37	2,40	0.31	11.9	1.0	54.7	1.6	11.2	0.5	4.07	0.26	50.4	1.9	16.9	8.0	0.990	0.084	13.1	1,1	0.39	0.03
E18	3.20	013	2.47	0.12	11.6	2.2	57.8	2.9	10.2	0.6	3.98	0.30	59.4	3.4	15.1	1.7	1.15	0.11	9.35	0.56	0.34	0.03
E19	2.08	0.28	1.51	0.23	7.12	0.69	40.1	1.5	5.78	0.24	2.22	0.12	41.1	1.6	8.43	0.45	0.936	0.064	4.42	9.55 1,0	0.18	0.04 0.04
E20	2.17	0.15	1.73	0.12	8.00	0.38	42.6	3.9	8.82	0.62	3.47	0.38	56.6	5.0	13.5	1.5	0.743	0.108 BDL	13.2 0.943	0.544	NQ	NQ.
E21	0.829	0.065	0.715	0.092	2.00	0.05	5.23	0.39	NO	NQ	NQ.	NO	5.85	0.48	BDL	BDL 1.9	8DL 0,681	0.168	10.4	0.9	0.39	0.03
E22	2.62	0.22	2.07	0.13	8.27	0.65	47.7	4.3	9.38	0.63	3.88	0.34	49.8	6.2 1.2	15.0	1.0	0.901	0.059	3.16	1.09	0.31	0.04
E23	2.23	0.21	1.67	0.10	7.02	0.80	46.4	1.4	10.2	0.9	3.78	0.31	52.0 20.7	1.8	4.65	0.49	NO NO	NQ.	4.82	0.55	0.16	0.02
£24	2.23	0.20	1.79	0.14	4.30	0.48	21.3	2.4	3.72 12.6	D.40 0.5	1.47 4,98	0.21 0.46	64.2	5.6	19.7	3.0	1.12	0.16	15.3	0.8	0.43	0.03
E25	2.73	0.29	2.04	0.25	12.4	1,3	54.7 24.0	3.4 1.8	4,14	0.20	1.49	0.43	23.9	2,1	4.42	0.59	0.775	0.080	3.60	1.06	0.14	0.02
E26	2.24	0.32	1.91	0.18 0.14	5.10 3.12	0.68 0.40	16.8	2.2	1.94	0.17	0.668	0.119	17.6	2,3	NO	NQ	NO	NO	1.98	0.30	0.10	0.01
E27 E28	1.40 4.18	0.13 0.32	1.13 3.31	0.14	13.9	1.9	59.7	5.0	13.1	0.5	4.81	0.40	72.2	5.7	21.9	2.6	1.24	0.10	16.9	1.7	0.55	0.06
E29	3.29	0.52	2,59	0.36	9.50	1.10	47.4	4.4	10.5	1,0	3.70	0.53	47.3	4.3	13.9	1,5	0.959	0.179	13.0	1.4	0.37	0.03
E30	3.5t	0.35	2.68	0.21	9.45	0.84	53.1	2.6	11,4	0.3	4.17	0.20	47.5	2.2	16.3	0.8	0.949	0.117	6.02	0.75	0.39	0.06
E31	0.635	0.117	0.507	0.086	1.50	D.12	10.3	0.9	1.04	0.10	0.418	880.0	10.4	0.7	NO.	NQ	NO	NO	1.22	0.45	0.03	0.01 0.03
E32	2.41	0.14	1.84	0.11	6.21	0.58	32.9	3.0	5.81	0.40	2.17	0.21	38.8	2.4	7.73	0.62	0.591	0.125	5.08	0.73	0.20	0.03
€33	1.76	0.16	1,45	0.12	3.11	0.33	18.4	8.0	2,47	0.21	0.890	0.048	17.8	0.7	2.83	0.26	NQ 0.000	NQ 0.000	2.18	0.43 0.9	0.09	0.02
€34	2.63	0.15	2.06	0.10	8.44	0.76	47.2	2.1	8.91	0.43	3.37	0.23	52.3	2.6	13.4	0.7 0.8	0.838 0.895	0.062 0.085	7,55	0.62	0.28	0.02
€35	2.64	0.21	2.14	0.18	7.46	9.6B	41.1	1.9	8.32	0.59	3.18	0.32	42.1 18.5	2.1 0.4	11.3 3.89	0.38	NQ	NO.	2.83	0.61	0.10	0.01
E36	2.16	0.20	1.65	020	4.28	0.42	20.2	0.3	3.40	0.16 0.09	1,28 0,628	0.12 0.040	16.1	0.6	2.17	0.09	NO	NO	2.18	0.52	0.07	0.01
E37	1.40	0.16	1.20	0.06	2.35	0.27 1,1	62.2	0.6 4.8	1.86	0.05	4.89	0.41	68.0	3.1	22.4	0.9	1.14	0.06	13.2	2.2	0.46	0.09
E38	3.78	0.38	2.86	0.24	520	0.47	30.1	0.8	4.87	0.37	1.80	0.19	27.5	0.7	5.93	0.61	NQ.	NQ	1.88	0.44	0.14	0.04
€39	1.65	0.16	1.44	0.18	1520	0.47	30.1	0.0	1 4.07		1.00	9,10										
V1	2.52	0.20	1,98	0.15	7.22	0.47	33.2	2.5	5.92	0.40	2.30	0.22	34.9	2,4	8.87	0.85	0.695	0.057	7.60	0.83	0.26	0.03
V2	2.40	0.14	1.82	0.11	12.8	1.3	73.4	5.0	13.3	0.8	5.75	0.47	75.1	3.2	23.7	2.5	0.685	0.067	12.7	2.0	0.56	0.03
V3	1.83	0.21	1.51	0.10	5.60	0.49	25.9	1.8	3.58	0.25	1.29	0.07	31.5	3.1	5.21	0.42	0.630	0.026	5.21	0.84	0.18	0.02
V4	1,67	0.04	1.35	0.07	4.31	0.42	19.4	1.5	2.68	0.20	0.987	0.060	19.6	1.2	3.65	0.29	0.547	0.095	3.33	0.82	0.14 0.07	0.01 0.01
V5	0.626	0.083	0.539	0.037	1.02	0.11	6.08	0.68	1.08	0.11	0.396	0.025	5.53	0.59	NQ 8.51	NQ 0.51	0,816	NQ 0.029	1.96 7.40	0.42 0.98	0.07	0.03
V6	2.97	0.23	2.20	0.06	9.28	0.50	34.1	1.5	4.72	0.24	1.64	0.16	34.2	2.2 2.7	8.51 8.69	0.51 0.58	0.714	0.029 0.068	7.06	0.97	0.25	0.03
V7	1.56	0.16	1.20	0.09	7.13	0.83	33.8	3.5	5.42	0.45	2.31	0.23 0.34	39.2 43.9	2.7 3,0	14.8	1.5	1,11	0.04	16.2	1.9	0.50	0.03
V8	3.16	0.20	2,43	0.15	9.67	0.56	43.1	2.2	9.09	0.53 0.60	3,54 3,61	0.28	55.4	3,u 4,4	15.0	0.9	1.09	0.03	15.0	0.4	0.48	0.02
V9	2.79	0.24	2.13	0.11	12.4	1.0	44.2	2.6	8.89	v.00	J 3.01	0.60		4/4	1							
	4.07	0.46	0.20	0.36	7.33	1.39	40.9	2.0	8.43	0.42	3,50	0.29	39.2	1.9	11.3	0.5	0.857	0.076	8.02	0.36	0.28	0.02
R1	2.97	0.45 0.20	2.30 2.33	0.36	6.74	0.70	34.3	0.8	7.03	0.39	2.88	0.15	37.9	2.3	9.66	0.80	0.806	0.035	8.55	0.55	0.30	0.02
R2	3.08	v.zu	2.00	Vill	1 0.14	אוית	1 04.0	u.u	1.00	2.47	<u></u>											

E1 76 E2 85 E5 81 H E5 8	NNN (6 (ng/cig) (ng/c	9) 5D 7.4 2.7 10 2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11 24	NNK (ng/c (ng/c))))))))))))))))))))))))))))))))))))	50 5.3 1,4 4 3.9 3.5 2.1 6.5 6.3 6.1 4.6 5.9 4.6 3.1 5.6	NAT (ng/c Average 71.0 77.4 160 30.1 129 44.2 107 83.4 78.6 143 18.0 40.8 39.9	sig) SD 57 4.5 9 1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	NAB (ng/c Average 10.8 10.0 18.6 5.22 18.5 7.53 14.5 16.7 9.39 13.3 24.7 NO		Average 3.24 2.70 3.08 1.60 2.27 NQ 2.87 1.73 2.63 2.65 2.41	SO 0.78 0.36 0.13 0.28 0.35 NO 0.37 0.33 0.31 0.34	cadm (rg/c Average 46.9 34.0 50.9 11.4 17.2 3.99 31.3 12.0 30.8	SD 3.6 2.0 3.4 0.8 1.2 0.42 2.4 0.9	(ng/s) Average 23.4 NO 20.1 NO 21.1 BDL 23.3 NQ	SD 1.2 NQ 1.4 NO 1.2 BOL 2.2	Average NO NO BDL NO NO NO BDL NO NO NO BDL NO BDL	SD 20 20 20 20 20 20 20 20 20 20 20 20 20	(ng/c Average BDL BDL BDL BDL BDL BDL BDL	SD BDL BDL BDL BDL BDL BDL	(ng/d Average NQ NQ NQ BDL NQ BDL NQ BDL	50 SO SO SO SO SO SO SO SO SO SO SO SO SO	Ing/o Average BOL	SD BDL BOL BOL BDL BDL BDL BDL BDL	6.16 6.19 6.17 6.24 6.17 6.24 6.13 6.17 6.15	SD 0.04 0.05 0.05 0.05 0.06 0.04 0.04
Ave   E1   76   E2   85   E3   11   E4   E5   E6   46   E7   E7   E8   E9   E8   E10   E11   E14   E15   46   E15   E16   E18   E16   E18   E1	rerage 78.2 89.2 189 30.7 148 46.8 100 85.8 56.8 100 161 14.8 43.0 46.6 171 157 126 57.1	5D 7.4 2.7 10 2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11 24	Average 52.0 41.4 104 20.4 75.0 21.5 79.5 59.2 96.2 12.7 18.6 27.0 29.5	5.3 1.4 4 3.9 3.5 2.1 6.5 6.3 6.1 4.6 5.9 4.6 3.1 5.6	Average 71.0 77.4 160 30.1 129 44.2 107 83.8 54.4 78.6 143 16.0 40.8	SD 5.7 4.5 9 1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	Average 10.8 10.0 18.6 5.22 18.5 7.53 14.5 16.7 9.39 13.3 24.7 NO	SD 1.8 1.5 3.4 0.99 2.1 1.43 2.5 2.3 1.75 1.8 2.4	3.24 2.70 3.08 1.60 2.27 NQ 2.87 1.73 2.63 2.65	SO 0.78 0.36 0.13 0.28 0.35 NO 0.37 0.33 0.31	Average 46.9 34.0 50.9 11.4 17.2 3.99 31.3 12.0	SD 3.6 2.0 3.4 0.8 1.2 0.42 2.4 0.9	23.4 NO 20.1 NO 21.1 BDL 23.3	SD 1.2 NQ 1.4 NO 1.2 BOL 2.2	NQ NO BDL NQ NQ NQ BDL	555855	BDL BDL BDL BDL BDL BDL	BDL BDL BDL BDL BDL BDL BDL	NG C C C C C C C C C C C C C C C C C C C	20 20 20 80 80 80 80	BOL BOL BOL BOL BOL BOL BOL BOL	BDL BDL BDL BDL BDL BDL BDL BDL	6.16 6.19 6.17 6.24 6.17 6.24 6.13 6.17	0.04 0.05 0.05 0.06 0.06 0.06 0.04 0.04
E1 76 E2 85 E5 81 H E5 8	78.2 89.2 189.2 189.2 189.2 189.2 148.8 46.8 100 161 144.8 45.0 46.6 171 157 157 156 157 157	7.4 2.7 10 2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11 24	52.0 41.4 104 20.4 75.0 21.5 79.5 59.2 37.9 64.2 96.2 12.7 18.6 27.0 29.5	5.3 1.4 4 3.8 3.5 2.1 6.5 5.3 6.1 4.6 5.9 4.6 3.1 5.6	71.0 77.4 160 30.1 129 44.2 107 83.8 54.4 78.6 16.0 40.8	5.7 4.5 9 1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	10.8 10.0 18.6 5.22 18.5 7.63 14.6 16.7 9.39 13.3 24.7	1.8 1.5 3.4 0.99 2.1 1.43 2.5 2.3 1.75 1.8 2.4	3.24 2.70 3.08 1.60 2.27 NQ 2.87 1.73 2.63 2.65	0.78 0.36 0.13 0.28 0.35 NQ 0.37 0.33	46.9 34.0 50.9 11.4 17.2 3.99 31.3 12.0	3.6 2.0 3.4 0.8 1.2 0.42 2.4 0.9	23.4 NO 20.1 NO 21.1 BDL 23.3	1.2 NQ 1.4 NO 1.2 BDL 2.2	NQ NO BDL NQ NQ NQ BDL	5 5 5 8 8 8 8	BDL BDL BDL BDL	BDL BDL BDL BDL BDL	NO NO BDL NO BDL NO	NG NG BÖL NG BDL NG	BDL BDL BDL BDL BDL BDL BDL	BOL BOL BOL BOL BOL BOL	6.19 6.17 6.24 6.17 6.24 6.13 6.17	0.05 0.05 0.05 0.06 0.02 0.04
E2 85 E3 11 E4 30 E5 E6 4	89.2 189 30.7 148 46.8 100 85.8 58.5 100 45.0 45.0 46.8 171 126 57.1	2.7 10 2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11 24	41.4 104 20.4 75.0 21.5 79.5 59.2 37.9 64.2 96.2 12.7 12.7 29.5	1.4 3.8 3.5 2.1 6.5 6.3 6.1 4.6 5.9 4.6 3.1 5.6	77,4 160 30.1 129 44.2 107 83.8 54.4 78.6 143 18.0 40.8	4.5 9 1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	10.0 18.6 5.22 18.5 7.63 14.6 16.7 9.39 13.3 24.7	1.5 3.4 0.99 2.1 1.43 2.5 2.3 1.75 1.8 2.4	2.70 3.08 1.60 2.27 NQ 2.87 1.73 2.63 2.65	0.36 0.13 0.28 0.35 NQ 0.37 0.33 0.31	34.0 50.9 31.4 17.2 3.99 31.3 12.0	2.0 3.4 0.8 1.2 0.42 2.4 0.9	NO 20.1 NO 21.1 BDL 23.3	NQ 1,4 NO 1,2 BOL 2,2	BDL NQ NQ NQ NQ BDL	NO NO	BOL BOL BOL BOL	BDL BDL BDL BDL	NQ BDL NQ BDL NQ	NQ BÖL NQ BDL NQ	BOL BOL BOL BOL BOL BOL	BOL BOL BOL BOL BOL	6.17 6.24 6.17 6.24 6.13 6.17	0.06 0.05 0.06 0.02 0.04
E3 11	189 30.7 148 46.8 100 85.8 58.5 100 161 14.8 43.0 45.0 46.8 171 157 126 57.1	10 2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11	104 20.4 75.0 21.5 79.5 59.2 37.9 64.2 96.2 12.7 12.7 29.5	4 3.9 3.5 2.1 6.5 5.3 6.1 4.6 5.9 4.6 3.1 5.6	160 30.1 129 44.2 107 83.8 54.4 78.6 143 18.0 40.8	9 1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	18.6 5.22 18.5 7.83 14.6 16.7 9.39 13.3 24.7	3.4 0.99 2.1 1.43 2.5 2.3 1.75 1.8 2.4	3.08 1.60 2.27 NQ 2.87 1.73 2.63 2.65	0.13 0.28 0.35 NQ 0.37 0.33 0.31	31,4 17.2 3,99 31.3 12.0	0.8 1.2 0.42 2.4 0.9	NO 21.1 BDL 23.3	NO 1.2 BOL 2.2	NO NO NO BDL	NO NO	BDL BDL BDL	BDL BDL BDL	BDL NO BDL NO	BÖL NO BDL NO	BDL BDL BDL BDL	BDL BDL BDL BDL BOL	6.24 6.17 6.24 6.13 6.17	0.05 0.06 0.02 0.04 0.04
E4 30.5 E6 46 E7 11 11 11 11 11 11 11 11 11 11 11 11 11	30.7 148 46.8 100 85.8 58.5 100 161 14.8 43.0 46.0 46.0 171 157 126	2.7 10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11	20.4 75.0 21.5 79.5 59.2 37.9 64.2 98.2 12.7 18.6 27.0 29.5	3.9 3.5 2.1 6.5 6.3 6.1 4.6 5.9 4.6 3.1 5.6	30.1 129 44.2 107 83.8 54.4 78.6 143 16.0 40.8	1.5 9 6.8 2 4.0 6.2 7.8 7 2.6 3.4	5.22 18.5 7.83 14.5 16.7 9.39 13.3 24.7 NO	2.1 1.43 2.5 2.3 1.75 1.8 2.4	2.27 NQ 2.87 1.73 2.63 2.65	0.35 NQ 0.37 0.33 0.31	17.2 3.99 31.3 12.0	1.2 0.42 2.4 0.9	21.1 BDL 23.3	1.2 80L 2.2	NQ NQ BDL	NO NO	BDL BDL	BDL BDL	NQ BDL NQ	NO BDL NO	BDL BDL BDL	BDI. BDL BDL BDL	6.17 6.24 6.13 6.17	0.06 0.02 0.04 0.04
E6	148 46.8 100 85.8 85.5 100 161 14.8 43.0 46.0 46.0 171 157 126	10 8.2 7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11	21.5 79.5 59.2 37.9 64.2 96.2 12.7 18.6 27.0 29.5	2.1 6.5 6.3 6.1 4.6 5.9 4.6 3.1 5.6	44.2 107 83.8 54.4 78.6 143 16.0 40.8	6.8 2 4.0 6.2 7.8 7 2.6 3.4	7.83 14.5 18.7 9.39 13.3 24.7 NO	1.43 2.5 2.3 1.75 1.8 2.4	NQ 2.87 1.73 2.63 2.65	NQ 0.37 0.33 0.31	3,99 31.3 12.0	0.42 2.4 0.9	BDL 23.3	2.2 80L	NCI BDL	NQ	BDL	BDL BDL	BDL NO	BDL NO	BDL BDL	BDL BDL BOL	6.24 6.13 6.17	0.02 0.04 0.04
E7 111 E8 85 E9 58 E10 111 E112 144 E113 45 E114 45 E115 46 E116 11 E117 111 E118 E	100 85.8 58.5 100 161 14.8 43.0 45.0 46.6 171 157 126	7 8.1 5.0 8 4 1.4 3.3 4.1 5.8 11	79.5 59.2 37.9 64.2 96.2 12.7 18.6 27.0 29.5	6.5 5.3 6.1 4.6 5.9 4.6 3.1 5.6	107 83.8 54.4 78.6 143 18.0 40.8	2 4.0 6.2 7.8 7 2.6 3.4	14.5 16.7 9.39 13.3 24.7 NO	2.5 2.3 1.75 1.8 2.4	2.87 1.73 2.63 2.65	0.37 0.33 0.31	31.3 12.0	2.4 0.9	23.3	2.2	BDL		1	BDL	NQ	NO	BDL BDL	BOL BOL	6.13 6.17	0.04 0.04
E8 85 85 85 89 58 89 58 810 111 111 111 111 111 111 111 111 11	85.8 58.5 100 161 14.8 43.0 45.0 46.6 171 157 126 57.1	8.1 5.0 8 4 1.4 3.3 4.1 5.8 11	59.2 37.9 64.2 96.2 12.7 18.6 27.0 29.5	5,3 6,1 4,6 5,9 4,6 3,1 5,6	83.8 54.4 78.6 143 16.0 40.8	4.0 6.2 7.8 7 2.6 3.4	16.7 9.39 13.3 24.7 NO	2.3 1.75 1.8 2.4	1.73 2.63 2.65	0.33 0.31	12.0	0.9				BUL	DUL				BDL	BOL	6.17	0.04
E9 58 56 56 56 56 56 56 56 56 56 56 56 56 56	58.5 100 161 14.8 43.0 45.0 46.6 171 157 126 57.1	5.0 8 4 1.4 3.3 4.1 5.8 11	37.9 64.2 96.2 12.7 18.6 27.0 29.5	5.1 4.6 5.9 4.6 3.1 5.6	54.4 78.6 143 16.0 40.8	6.2 7.8 7 2.6 3.4	9.39 13.3 24.7 NO	1.75 1.8 2.4	2.63 2.65	0.31	1		I NO		BOL	BOL	BOL	BD∟						
E10 11 11 11 11 11 11 11 11 11 11 11 11 1	100 161 14.8 43.0 45.0 46.6 171 157 126 57.1	8 4 1.4 3.3 4.1 5.8 11	64.2 96.2 12.7 18.6 27.0 28.5	4.6 5.9 4.6 3.1 5.6	78.6 143 16.0 40.8	7.8 7 2,6 3,4	13.3 24.7 NO	1.8 2.4	2.65		D.Q.a		15.8	NQ 1.7	BDL	BDL	BDL	BDL	NO	NQ	BD1.	BOL		0.04
E11 111 E12 144 E13 46 E14 45 E15 46 E16 11 E17 111 E18 111 E19 57 E20 48	161 14.8 43.0 45.0 46.6 171 157 126 57.1	4 1.4 3.3 4.1 5.8 11	96.2 12.7 18.6 27.0 29.5	5.9 4.6 3.1 5.6	143 16.0 40.8	7 2.6 3.4	24.7 NO	2.4			40.6	2.6 3.4	26.2	1.6	NG.	NQ.	BDL	BDL	NQ	NO	BDL	BDL	6.17	0.03
E12 14 E13 45 E14 45 E15 46 E16 11 E17 11 E18 11 E19 57 E20 48	14.8 43.0 45.0 46.8 171 157 126 57.1	1.4 3.3 4.1 5.8 11 24	12.7 18.6 27.0 29.5	4.6 3.1 5.6	16.0 40.8	2,6 3,4	NO.			0.38	27.6	1.0	22.8	1.3	BDL	BDL	BDL	BDL.	NO	NO	BDL	BDL	6.14	0.04
E13 45 E14 45 E15 46 E16 11 E17 15 E18 13 E19 57 E20 46	43.0 45.0 46.6 171 157 126 57.1	3.3 4.1 5.8 11 24	18.6 27.0 29.5	3.1 5.6	40.8	3.4			2.64	0.36	25.0	1,4	NO	NQ	BDL	BDL	<b>B</b> DL	₽ DL	NQ	NO	8DL	BDL	6.09	0.03
E14 45 E15 46 E16 11 E17 11 E18 11 E19 57 E20 46	45.0 46.6 171 157 126 57.1	4.1 5.8 11 24	27.0 29.5	5.6			7.16	1.02	BDL	BDL	2.83	0.12	BOL	BOL	NO.	NQ	BDL	BOL	BDL	BQL.	8DL	8DL	6.26	0.03
E15 46 E16 11 E17 19 E18 13 E19 57 E20 46	46.6 171 157 126 57.1	5.8 11 24	29.5			4.0	6.61	0.85	2.20	0.31	22.1	0.9	NQ:	NQ	BOL	BDL	NO	NQ	8DL	BDL	BDL	BDL,	6.22	0.02
E16 11 E17 11 E18 11 E19 57 E20 48	171 157 126 57.1	11 24		3.5	40.3	B.7	6.84	1.37	NO	NQ	10.2	0.7	NQ.	NQ	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6.17	0.04
E18 1: E19 5: E20 48	126 57.1	-		9	148	14	26.2	3.4	2.62	0.26	25.6	1.0	22.2	2.1	BDL	BDL	BDL	8DL	NC)	NO 1.41	BOL	BDL I	6.13 6.04	0.04
E19 57 E20 48	57.1		108	17	140	20	26.6	3.0	3.46	0.25	65.8	4.0	25.8	1.7	8DL	BDL	BDL	BDL BDL	3.92 NO	1.41 NO	BDL BDL	BOL :	6.19	0.03
E20 48		7	78.4	B.7	107	8	17.9	3,1	3.44	0.88	50.5	2.7	22.7	1.5	BDL	8DL 8DL	BDL BDL	80L	NO NO	NO NO	BDL	BOL :	8.19	0.03
	48 1	3.6	36.1	5.3	52.6	6.3	8.98	0.53	2.33	0.25	23.6	1.4	NQ 16.8	NQ 4.0	BOL	BDL	BOL	BDL BDL	NO	NO.	BOL	BDL	6.09	0.04
		3.9	27.7	4.9	44.1	3.0	7.23	1.22	2.72 BDL	0.42 BDL	1.81	2.9 0.57	BDL	BDL	BDL	BDL	BOL	BDL	NO	NO	BOL	BOL	6.18	0.04
	42.5	4.7	16.0	2.7	38.6	3.3	7.17	1.35 1.65	2.83	0.19	31.0	2.6	18.2	0.7	BDL	8DL	BDL	BDL	NQ	NO	BDL	BDL	6.12	0.03
	52.4	5.4	37,7 42,4	2.4 7.7	50.3 46.9	4,1 3,6	9.61	1.40	1.66	0.22	8.47	0.77	NQ.	NQ	BDL	BDL	BDL,	BOL	NO.	NO	BDL	BOL.	6.13	0.05
	47.2 104	3.6 4	42.4 53.9	6.6	91.2	5.0	16.3	1.6	1.96	0.24	24.6	1.2	NQ	NG	BOL	BDL	BDL	BOL.	NQ	NQ	BDL	9 DL	6.23	0.06
	54.9	4.5	36.7	7.4	52.4	4.1	5.98	1.29	3.28	0.33	42.1	3.0	21.1	2.8	BOL	BDL	BDL	BOL	NQ	NQ	BDL	BOL	6.08	0.06
	95.1	4.6	55.1	4.7	88.1	5.1	16.0	1.8	2.09	0.45	35.0	4.6	NO	NO	BDL	BOL	BDL	BDL	NQ	NO	8DL	BOL	6.17	0.05
E27 30	30.0	2.1	19.4	2.8	30.7	3.8	6.28	1.10	NQ.	NQ .	8.87	1.23	NΩ	NQ	BDL	BDL	BDL	₽DL	NO.	NO	BDL BDL	BDL BOL	6.22 6.13	0.02 0.08
E28 1	195	12	87.3	8.2	153	10	28.5	3.7	3.63	0.16	66.3	3.2	31.4	1,6	BDL	BOL	SDF SOF	B DL	NO NO	NO NO	BDL	BOL	6.12	0.04
E29 1	152	9	106	7	135	4	22.3	3.0	3.59	0.62	59.4	2.9	23.7	3.7	BDL BDL	BDL BDL	8DL	BDL BDL	NO	NO	BDL	BDL	6.02	0.03
	146	7	87.1	4.4	136	9	15.6	1.7	2.93	0.33 BDL	31.2 4.28	1.4 0.35	23.1 NQ	2.2 NQ	BDL	BDL	BOL	BDL	BDL	BOL	BDL	BDL	6.10	0.01
	5.04	1.35	ИO	NO	7.96	2.48	NQ	NQ 114	BDL 2.45	0.24	27.6	2.3	13.3	3.4	BDL	BDL	BDL	BDL	NQ	NQ	BDL	BOL	610	0.03
1 -	66.5	5.4	44.6	5.3	59.5 67.2	4.9 7.4	10.1	1.14 0.7	1 2.43 NO	NQ	11.2	0.7	NO.	NO.	NO.	NQ	BDL	BDL	NO	NO	BDL	BOL	6.13	0.02
(	72.1 66.8	6.7 3.1	46.1 49.7	4.6 1.6	81.2	2.1	6.90	1.05	2.91	0.38	37.3	2.3	19.9	1,9	BDL	8DL	BDL	BOL	NO	NO	BDL	BOL	6.01	0.02
	70.9	6.7	57.7	7.0	63.4	6.6	7.58	1.52	2.83	0.27	39.6	3.0	17.3	1.6	BDL	BDL	BDL	BOL	NQ	NQ:	BOL	BDL	6.04	0.03
	79.6	10.6	53.4	8.5	71.5	7.3	10.B	1.5	1.75	0.28	23.3	2.1	, NO	NG	BDL	BDL	BOL	BOL	NΩ	NO	BOL	BDL	6.11	0.01
	33.5	3.1	26.9	4.3	33.9	2.7	5.29	0.83	NQ	NO	8.67	0.70	NO	NO	BOL	BDL	BDL	BOL	BDL	BOL	BDL	BDL.	6.13	0.03
	125	6	74.2	4.3	84.6	8.9	14.1	2.3	3.31	0.54	43.3	1,5	27.6	2.5	BDL	BDL	BDL	BOL	5.48	1,17	80L	BDL BDL	6.99 6.08	0.02 0.04
E39 6	63.4	6.2	45.0	4.9	55.7	5.1	7.77	0.94	1,54	0.56	9.26	0.82	NQ	NO	BDL	BDL	BDC	BDL	NQ.	NQ	acc	UCL	0.00	
	110		I BO I	# 7	120	4	15.4	2,4	2.77	0.24	32.2	3,0	T NO	NO.	BDL	BDŁ	BDL	BDL	NO	NQ	BDL	BOL	6.27	0.07
1	142	5 2.5	90.1 34.3	8.7 3.1	42.7	1.8	6.56	0.75	3.69	0.20	34.2	3.2	16.7	5.3	NO	NQ	BDL	BDL	NQ	NΩ	BDL	BDL	6.17	0.0
	26.6 41.1	6.7	23.7	4.1	38.3	4.0	4.28	0.77	2.67	0.36	26.8	2.9	13.0	3.3	NQ	NQ	60T	BDL	NO	NQ	BDL	BDL	6.21	0.0
- 1	62.7	5.9	42.2	6.2	58.9	4.8	7.60	1.19	1.99	0.15	13.0	1.8	NQ	NQ	BOL	BDL	ed.	BDL	NO	NQ	BDL	BDL	6.28	0.0
	38.0	6.6	19.2	3.8	37.6	5.1	6.42	1.19	1.68	0.18	5.14	0.65	BOL	BDL	BDL	BDL	BOL	BOL	BOL	BDL	BDL	BDL	827	0.0
	127	13	87.4	10.3	119	10	18.9	2.6	3.71	0.22	45.6	3,8	13.9	4.0	NO	NQ	NO	NO	NO	NQ NQ	BDL BDL	BDL BDL	6.15 6.14	0.04
V7 1	17.0	2.5	30.1	8.4	28.6	3.3	2.67	0,93	2.75	0.32	28.0	2.3	NQ au a	NO	BDL	BOL	BDL BDL	BDL BDL	NO 4.29	NQ 1.04	BDL	BOL	6.20	0.0
	117	5	47.3	1.2	97.2	3.0	13.2	1.3	4.66	0.36	101	12	21.7 16.9	1.6 2.2	BDL	BOL BDL	BDL	80L	NQ	NO	BDL	BOL	6.22	0.0
V9 6	63.5	6.0	51.8	6.3	56.3	3.6	9.27	1.23	3.58	0.34	.46.4	5,0	1 (0.9	2.2	LEUC	ODE			- 4/11					
E 1	107	4	75.6	8.5	118	8	25.3	3.1	5.17	0.40	68.7	1.7	39.2	1.9	BDL	BOL	8DL	BOL	4.66	1.26	9DL	BOL	5.92	0.0
	109	13	87.7	12.4	127	11	21.8	2.1	6.27	0.33	62.2	4.6	35.6	2,9	BDL	BOL	BDL.	BDL	NO.	NQ	BDL	BDL	5.97	0,10

Table 4: Mainstream Smoke Constituents at the Limits of Detection (LOD) and Limits of Quantitation (LOQ)

Smoke Constituent	unit	LOD	LOQ	# of Brands at Limits
nickel	ng/cig	6.47	21.6	48
chromium	ng/cig	5.94	19.8	48
selenium	ng/cig	2.21	7.37	48
arsenic	ng/cig	1.13	3.75	45
resorcinol	μg/cig	0.158	0.526	14
crotonaldehyde	μg/cig	0.980	3.29	11
mercury	ng/cig	1.10	1.50	8
phenol	μg/cig	0.573	1.91	5
o-cresol	μg/cig	0.074	0.245	3
NAB	ng/cig	0.634	2.00	2
quinoline	μg/cig	0.007	0.024	2
m & p-cresols	μg/cig	0.153	0.509	2
acrylonitrile	μg/cig	0.282	0.939	2
toluene	μg/cig	2.50	8.32	2
NNK	ng/cig	3.72	12.4	1
ammonia	μg/cig	0.725	2.45	1
acrolein	μg/cig	0.710	2.37	1
propionaldehyde	μg/cig	1.00	3.33	1
methyl ethyl ketone	μg/cig	1.09	3.66	1
NNK	ng/cig	3.72	12.4	1
pyridine	нд/сід µg/сід	0.237	0.791	i
styrene	μg/cig	0.170	0.560	i

Table 5: Weighted Regression of ISO Smoke Constituent Yields with ISO "Tar," Nicotine or Carbon Monoxide

Constituents		With ISO Tar			h ISO Nicot			Carbon Mo	
Consideriis		ighted by I			nted by 1/ni	cotine) PRESS	(Wei	ghted by 1/	CO) PRESS
	RSQ	RMSE	PRESS	RSQ	RMSE	PRESS	KS-GI	KIVISE	FRESS
Vapor Phase		1//	11852	0.93	74.6	224892	0.96	16.2	10821
acetaldehyde	0.96	16.6		0.93	74,6 43,9	78289	0.93	9.93	4104
acetone	0.93	10.6	4799			3326	0.93	2.18	191
acrolein	0.93	2.11	181	0.89	9.11			-	105
butyraldehyde	0.91	1.53	96	0.87	6.52	1711	0.90	1.62	84
crotonaldehyde	0.80	1.26	66	0.71	5.45	1208	0.75	1.43	
methyl ethyl ketone	0.89	3.17	417	0.84	13.5	7286	0.89	3.22	421
propionaldeyde	0.94	1.93	155	0.90	8.43	2861	0.93	1.99	161
acrylonitrile	0.92	0.41	7	0.86	1.85	137	0.89	0.47	9
benzene	0.86	2.04	173	0.84	7.67	2398	0.87	1.95	155
1,3-butadiene	0.95	1,42	88	0.94	5.13	1103	0.96	1.13	54
isoprene	0,91	15.8	10270	0.90	54.5	121776	0.91	14.8	8892
styrene	0.80	0.59	14	0.72	2.52	255	0.75	0.67	18
toluene	0.87	3,12	393	0.82	12.5	6248	0.86	3.17	402
hydrogen cyanide	0.91	6.50	1730	0.87	27.1	30182	0.87	7.87	2549
mercury	0.91	0.10	0.4	0.88	0.39	6	0.90	0.10	0.43
Particulate Phase									
formaldehyde	0.91	1.76	126	0.84	8.09	2633	88.0	1.99	161
ammonia	0.93	0.75	23	0.93	2.67	296	0.90	0.91	34
1-aminonaphthalene	0.88	0.99	42	0.91	2.86	343	0.87	1.02	43
2-aminonaphthalene	0.86	0.68	20	0.89	2.00	165	0.85	0.69	19
3-aminobiphenyl	0.89	0.14	1	0.92	0.40	7	88.0	0.14	1
4-aminobipheny!	0.87	0.11	1	0.90	0.33	4	0.87	0.11	1
benzo[a]pyrene	0.94	0.36	6	0.93	1.38	85	0.90	0.48	10
catechol	0.94	2.05	171	0.95	6.42	1655	0.92	2.32	215
m & p-cresols	0.96	0.37	5	0.94	1.53	95	0.90	0.56	13
p-cresol	0.94	0.16	1	0.92	0.66	18	0.88	0.23	2
hydroquinone	0.93	2.31	217	0.91	9.42	3560	0.90	2.87	330
phenol	0.92	0.75	23	0.90	3.03	377	0.85	1.08	47
resorcinol	0.80	0.07	0.2	0.83	0.20	1.9	08.0	0.06	0.2
pyridine	0.81	0.83	28	0.72	3.61	527	0.74	0.98	39
quinotine	0.96	0.01	0.01	0.93	0.06	0.14	0.90	0.02	0.02
cadmium	0.83	3.05	369	0.80	11.5	5269	0.82	3.13	393
iead	0.80	1.40	96	0.84	4.23	831	0.81	1.36	86

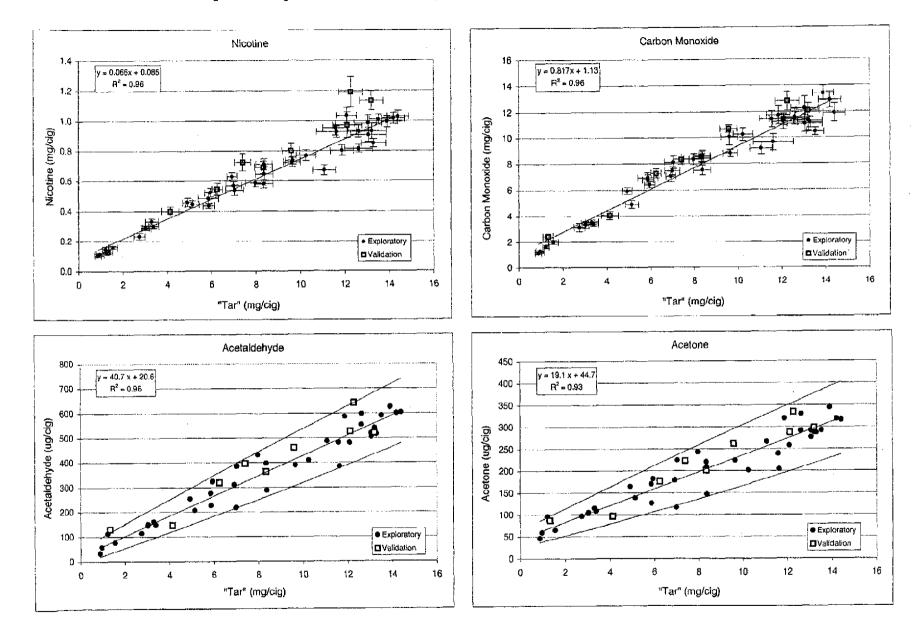
		[		V1				V2				V3				V4				V5	
MS Constituents (ISO) WLS (1/Tar)	Units	Measure	d Yields	Predicted Yields	PE	Measure	d Yleids	Predicted Yields	PE	Measure	d Yields	Predicted Yields	PE	Measure		Predicted Yields	PE	Measure		Predicted Yields	PE
Vapor - ISO Tar		Average	St Dev			Average	St Day			Averege	St Dev	است	l	Average	St Dev		L <u>.                                 </u>	Average	St Dev	L	
acetaldehyde	ug/cig	383	41	361	-2	643	40	521	-121	319	17	276	-43	147	16	189	43	<u>129</u>	<u>13</u>	<u>74.6</u>	<u>-54</u>
acetone	ug/cig	201	17	204	3	335	18	279	-56	176	10	164	-12	96.5	8.8	124	27.0	86.8	5.4	70.0	-16.8 -4,31
acrolein	ug/cig	30.8	4.6	32.2	1.4	60.3	4.5	47.2	-13.1	27.6	1.5	24.3	-3.3	12.1	1.6	16.2	4,1	9.75	0.61	5.44	
bulyraldehyde	ng/cig	24.7	3.7	23.5	-1.2	47.5	<u>3.9</u>	<u> 33.3</u>	14.2	20.9	1.5	18.4	-2.6	11.4	1,2	13.1	1.7	10.2	1.6	6.12	-4.1
crotonaldehyde	ug/clg	10.9	1,7	10.9	0.0	28.3	<u>2.9</u>	<u>15.9</u>	.12.4	8.86	1.10	8.22	-D.64	3.29	NO	5.52	2.23	3.29	NO	3.29	0.00
methyl ethyl ketone	ug/cig	41.8	4.2	41.4	-0.3	78.D	6.1	59.8	-18.2	34.5	2.8	31.7	-2.8	15.9	1.7	21.8	5.9	13.4	1,1	8.67	-4.7
oropionaldevde	ug/cig	32.8	3.9	33.5	0.7	56.4	3.3	48.2	-8.2	28.1	1.7	25.7	-2.4	13.8	1.6	17.8	4.0	11.8	3.1	7.29	-4.6
acrylonitrile	ug/cig	7.43	0.61	6.00	-1.43	11.1	0.8	8.67	-2.5	5.50	0.24	4.67	-0.92	3.18	0.29	3,13	-0.05	2.77	0.13	1.21	-1.56
benzene	ugicia	30.7	1.9	27.9	-2.8	44.4	2.8	38.1	-6,3	25.4	1.5	22.5	2.9	17.0	1.1	17.0	0.0	11.9	0.6	9.69	-23
1.3-butadiene	ug/clg	35.0	2.1	31.2	-3.8	54.1	<u>8.6</u>	42.9	<u>-11.2</u>	29.3	2.6	24.9	4.4	19.4	0.9	18.6	-0.8	13.5	0.5	10.2	·3.3
isoprene	ug/clg	291	19	272	-19	466	43	368	-98	244	21	220	-24	179	11	168	-11	134	5	98.6	-36
styrene	uo/cig	5.91	0.62	5.24	-0.68	10.4	1.4	7.60	-2.8	4.56	B3.0	3.98	-0.58	2.91	0.61	2.71	-0.20	1.85	0.36	1.02	-0.83
toluene	ua/cia	47.6	3.6	40.7	-7.0	67.5	3.3	56.6	-10.9	38.2	2.5	32.3	-5.9	25.0	2.0	23.8	-1.2	17.7	1.1	12.5	-5.3
hydrogen cyanide	ua/cia	68.3	3.7	74.3	6.0	135	12	114	-20	52.6	5.5	53.0	0.2	23.3	2.6	31.4	8.0	19.4	1.0	2.72	-16.7
mercury	ng/cig	2.77	0.24	2.38	-0.40	3.69	0.20	3.00	-0.69	2.67	0.36	2.04	-0.62	1.99	0.15	1,71	-0.28	1.68	0.18	1,26	-0.42
Particulate - ISO Ter		T															_				
formaldehyde	ug/clg	19.0	3.5	21.8	2.7	40.6	6.7	32.6	-8.0	17.3	1.9	16.0	-1.3	7.99	1.99	10.2	2.16	3.95	0.53	2.39	-1.56
ammonia	ug/cig	14.0	1.0	13.2	~0.8	12.4	1.2	<u>18.7</u>	<u>6.3</u>	9.69	1.37	10.3	0.62	7.33	0.70	7.36	0.03	3.14	0.46	3,44	0.30
1-aminonaphthalene	ng/cig	15.6	1.3	15.1	-0.5	18.1	3.2	20.4	2.3	12.6	2.0	12.3	-D.4	11.0	0.6	9.42	-1.6	4.30	0.73	5.61	1.32
2-aminonaphthalene	ng/cig	9.80	1.09	9.61	-0.18	9.61	1.32	12.9	3.10	7.51	1.05	7.85	0.34	6.89	0.43	6.07	-0.82	2.66	0.38	3.71	1.05
3-aminoblohenvl	ng/cig	2.52	0.20	2.28	-0.24	2.40	0.14	3.06	0.66	1.83	0.21	1.87	0.03	1.67	0.04	1.45	-0.23	0.626	0.083	0.890	0.264
4-aminobiohenyl	ng/cig	1.98	0.15	1.79	-0.19	1.82	0.11	2.37	0.55	1.51	0.10	1.48	-0.03	1.35	0.07	1.17	-0.19	0.539	0.037	0.749	0.210
benzolaloyrene	ng/cig	7.22	0.47	723	0.01	12.8	1.3	10.2	-2.6	5.60	0.48	5.68	80.0	4.31	0.42	4.11	-0.20	1.02	<u>0.11</u>	<u>2.02</u>	1.00
catechol	ug/cig	33.2	2.5	37.0	3.8	73.4	<u>5.0</u>	<u>53.1</u>	-20.3	25.9	1.6	28.4	2.5	19.4	1.5	19.7	0.3	6.06	0.66	8.10	2.02
m & p-cresol	ug/cig	5.92	0,48	6.93	1.01	13.3	<u>0.e</u>	10.4	-2.6	3.58	0.25	5.06	1.48	2.68	0.20	3.17	0.49	1.08	0.11	0.659	+0.42
o-cresol	ug/cig	2.30	0.22	2.55	0.25	5.75	<u>0.47</u>	<u>3.83</u>	1,91	1.29	0.07	1.87	0.58	0.987	0.060	1.18	0.192	0.396	0.025	0.264	-0.13
hydroquinone	ug/cig	34.9	2.4	38.7	3.7	<u>75.1</u>	3.2	55.9	<u>-19.2</u>	31.5	3.1	29.5	-1.9	19.6	1,2	20.2	0.6	5.53	0.59	7.95	2,42
phenol	ug/cig	8.67	0.85	10.0	1.29	23.7	<u>2.5</u>	15.2	<u>-8,6</u>	5.21	0.42	7.19	1.97	3.65	0.29	4.37	0.72	1.91	NQ	1,91	0.00
resorcinol	ug/cig	0.695	0.057	0.759	0.064	0.685	0.067	1.02	0.331	0.630	0.026	0.622	-0.008	0.547	0.095	0.483	-0.064	0.526	NQ	0.526	0.000
pyridine	ug/clg	7.50	0.83	6.77	-0.83	12.7	2.0	10.2	-2.5	5.21	0.84	4.97	-0.24	3.33	0.82	3.14	-0.19	1.96	0.42	0.724	-1.24
quinoline	ug/cig	0.262	0.028	0.244	-0.018	0.580	0.032	<u>0.367</u>	-0.1 <u>92</u>	0.189	0.017	0.178	-0.011	0.139	0.011	0.112	-0.027	0.087	0.013	0.024	-0.04
cadmium	ng/c/g	32.2	3.0	27.7	-4.5	34.2	3.2	40.9	6.7	28.8	2.9	20.7	<b>-6.1</b>	13.0	1.8	13.5	0.5	5.14	0.65	4.08	-1.06
lead	na/cia	12.8	NO	18.6	3.8	16.7	5.3	22.2	5,5	13.0	3.3	13.6	0.6	12.8	NQ	12.8	0.0	3.85	BOL	3.85	0.00

Prediction Error (PE) = Predicted yields - Measured yields
 Vields in bold are outside of the 95% predicted interval.
 When predicted yield < UOQ and > LOD, LOQ is reported.
 When predicted yield < UD, LOD is reported.

<del></del>		]		V6		1		V7				V8		L		VĐ	
MS Constituents (ISO) WLS (1/Tar)	Units	Measure	d Yields	Predicted Yields	PE	Measure	d Yields	Predicted Yields	PE	Measure	d Yields	Predicted Yields	PE	Measure	d Yields	Predicted Yields	PE
Vapor - ISO Tar	·	Average	St Dev			Average	St Dev			Average	St Dev			Average	St Dov		
acetaldehyde	ug/cig	461	61	411	-50	396	31	323	-73	520	49	559	39	527	64	515	•12
acetone	ug/clg	262	30	227	-34	224	15	186	-38	298	26	297	-2	288	25	276	-12
acrolein	ug/da	42.6	6.4	37.0	-5.6	39.9	3.2	28.7	-11.2	50.7	5.3	50.8	0.0	47.7	6.4	46.6	-1.1
butyraldehyde	ua/cla	33.1	4.2	26.6	<del>-8</del> .5	27.0	1.6	21.2	-5.8	35.7	3.2	35.6	-0.1	36.9	4.7	32.9	-4.1
crotonaldehyde	ug/cig	15.8	2.6	12.4	-3.4	16.5	1.9	9.68	-6.6	22.8	2.8	17.0	-5.8	22.8	3.0	15.7	-7.2
methyl ethyl ketone	ua/cla	53.9	6.1	47.2	-6.7	48.4	3.5	37.1	-11.3	62.8	6.4	64.1	1.3	64.2	5.4	59.0	-5.2
propionaldeyde	ug/cig	42.6	4.5	38.1	-4.4	35.4	2.6	30.0	-5.4	47.8	4.3	51.7	3.9	48.0	5.4	47.6	-0.4
acrylonitrile	ug/cig	9.72	0.53	8.84	·2.88	6.35	0.49	5.38	-0.99	11.3	0.6	9.31	-2.0	10.5	0.7	8.56	-2.0
henzene	ug/clg	39.7	2.0	31.1	-B.5	30.8	2.2	25.5	-5.3	43.1	0.7	40.5	-2.6	39.6	1.7	37.7	-1.9
1.3-butadiene	ug/cig	42.3	2.6	34.9	-7.5	38.7	2.3	28.4	-10.4	51.6	2.4	45.7	-5.9	47.4	1.9	42.4	-5.0
isoprene	ug/cig	363	22	302	-81	297	17	248	-48	448	25	391	-57	364	17	364	0
styrene	ug/clg	6.51	88.0	5.98	-0.53	7.32	0.69	4.67	-2.65	10.6	0.8	8.15	-2,4	11.1	0.5	7.50	-3,6
toluene	ug/cig	60.0	2.6	45.7	-14.3	43.8	3.4	37.0	-6.8	64.4	2.3	60.3	-4.1	63.6	3.6	55.9	-7.3
hydrogen cyanide	ug/cig	113	7	87.0	-25.9	65.4	7.4	64.7	-0.7	137	13	124	-13	128	11	113	-15
mercury	ng/cig	3.71	0.22	2.57	-1.14	2.75	0.32	2.23	-0.52	4.66	0.36	3.75	1.52	3.58	6.34	2.97	-0.6
Particulate - ISO Tar																	
formaldehyde	ug/cig	18.2	1,5	25.2	7.0	41.2	5,4	10.2	-22.0	34.8	5.9	35.2	0.4	32.4	4.8	32.2	-0.2
ammonia	ug/cig	16.9	1.3	15.0	-2.0	7.50	0.36	11.9	4.42	18.9	0.9	20.0	1.1	15.6	0.6	18.5	2.6
1-aminonaphthalene	ng/cia	21.5	4.3	16.8	-4.7	10.6	1.5	13.8	3.3	20.7	2.0	21.7	1.0	18,2	2.5	20.2	2.0
2-aminonaphthalene	ng/cig	13.6	2.0	10.7	-2.9	5.61	0.57	6.82	3.21	11.8	1.4	13.7	1.9	10.4	1.4	12.8	2.4
3-aminobiphenyl	ng/cig	2.97	0.23	2.53	-0.44	1.56	0.16	2.09	0.54	3.16	0.20	3.24	0.06	2.79	0.24	3.03	0.2
4-aminobiphenyl	ng/cig	2.20	0.06	1.97	-0.23	1.20	0.09	1.65	0.45	2.43	0.15	2.51	0.08	2.13	0.11	2.35	0.2
benzolalpyrene	ng/cig	9.28	0.50	8.15	-1.13	7.13	0.83	6 54	-0.60	9.67	0.56	10.8	1.17	12.4	1.0	10.0	-2.3
catechol	ug/cig	34.1	1.5	42.1	7.9	33.8	3.5	33.1	-0.7	43.1	2.2	57.0	13.9	44.2	2.6	52.5	8.3
m & p-cresol	ug/cig	4.72	0.24	8.03	3.31	5.42	0.45	6.09	0.67	9.09	0.53	11,3	2.17	8.89	0.60	10.3	1.4
o-cresol	ug/cig	1.64	0.15	2.95	1.32	2.31	0.23	2.25	-0.06	3.54	0.34	4.13	0.59	3.61	0.26	3.78	0.1
hydroguinone	ug/cig	34.2	2.2	44.1	9.9	39.2	2.7	34.6	-4.6	43.9	3.0	60.0	16.0	55.4	4.4	55.2	-0
phenol	ug/cig	6.51	0.51	11.6	5.10	8.69	0.56	8.72	0.03	14.8	1.5	16.4	1.7	15.0	0.9	15.0	0.0
resorcinol	ug/cig	0.816	0.029	0.840	0.024	0.714	0.088	0.697	-0.016	1,11	0.04	1.08	-0.04	1.09	0.03	1.01	-0.0
pyridine	ug/cig	7.40	0.98	7.84	0.44	-7.06	0.97	5.96	-1.10	16.2	1.9	11.0	-5.2	15.0	0.4	10.0	-4.
guinollne	ug/cig	0.243	0.026	0.283	0.040	0.254	0.015	0.215	-0.040	0.499	- D. <b>028</b>	0.397	0.102	0.485	<u>0.018</u>	0.362	-0.12
cadmium	ng/cig	45.6	3.6	31.9	-13.7	28.0	2.3	24.0	-3.5	101	<u>12</u>	44.1	<u>-57</u>	46.4	5.0	40.1	-6.
lead	na/cia	13.9	4.0	18.3	4.5	12.8	NO	15.2	2.4	21.7	1.6	23.5	1.8	16.9	2.2	22.0	5.1

Prediction Error (PE) = Predicted yields - Measured yields
 Pields in bold are outside of the 95% predicted interval.
 When predicted yield < LOQ and > LQD, LQQ is reported.
 When prodicted yield < LQD, LQD is reported.

Figure 1: Regression Plots from Weighted Linear Regression with 1/"tar" Weighting



12/17/02

1 of 4

figure 1 12-11-02

Figure 1: Regression Plots from Weighted Linear Regression from 1/"tar" Weighting

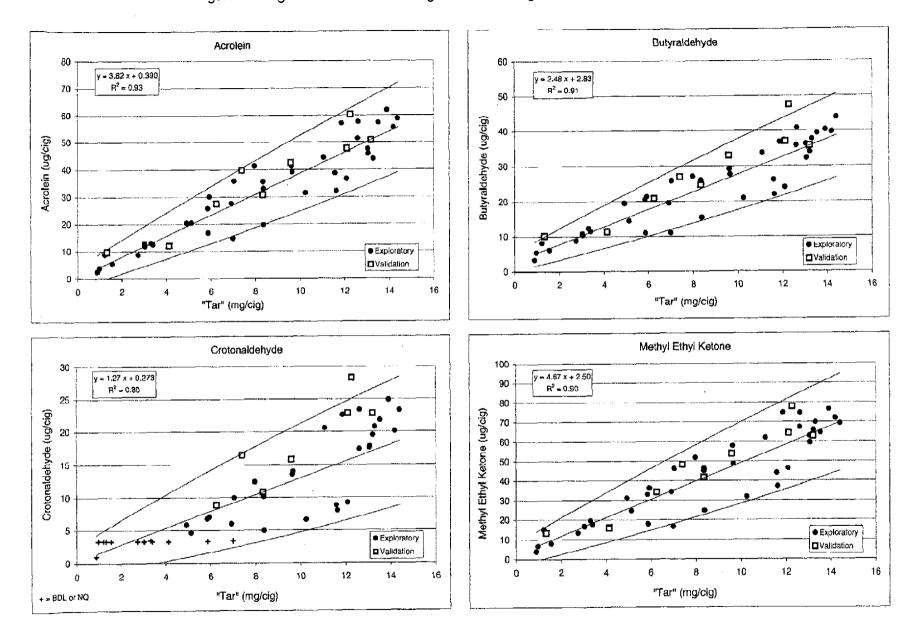


Figure 1: Regression PLots from Weighted Linear Regression with 1/"tar" Weighting

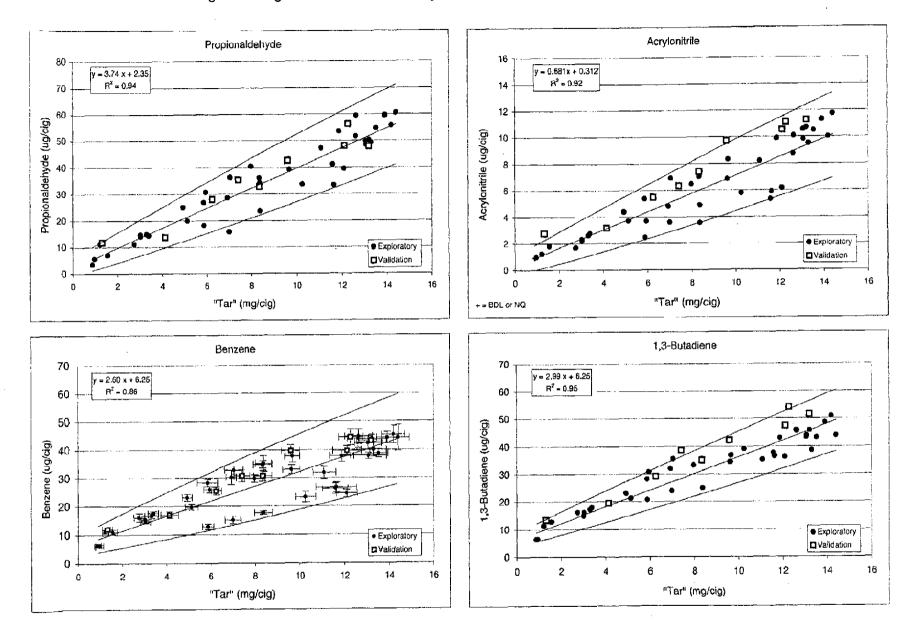


Figure 1: Regression Plots from Weighted Linear Regression with 1/"tar" Weighting

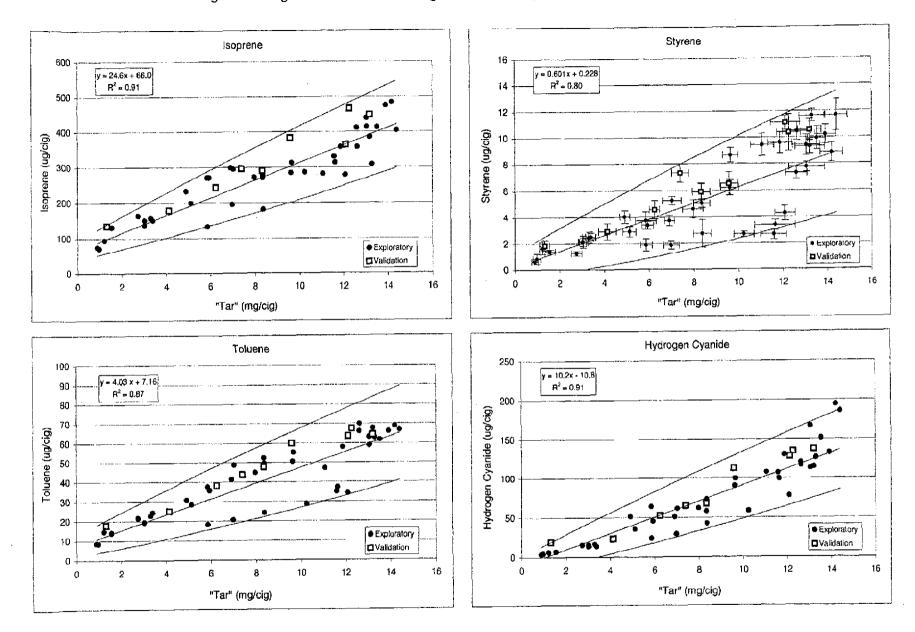


Figure 1: Regression Plots from Weighted Linear Regression with 1/tar Weighting

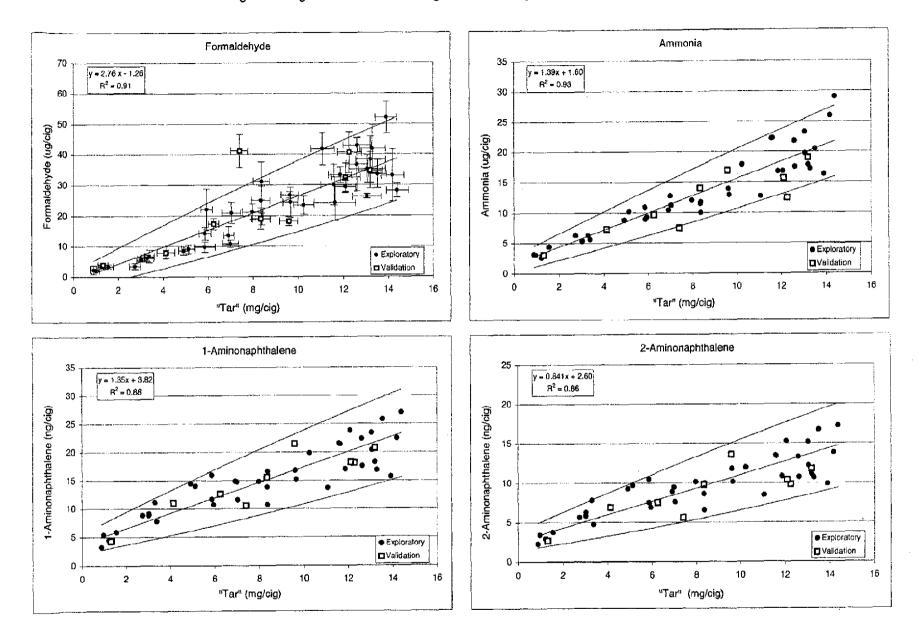


Figure 1: Regression Plots from Weighted Linear Regression with 1/"tar" Weighting

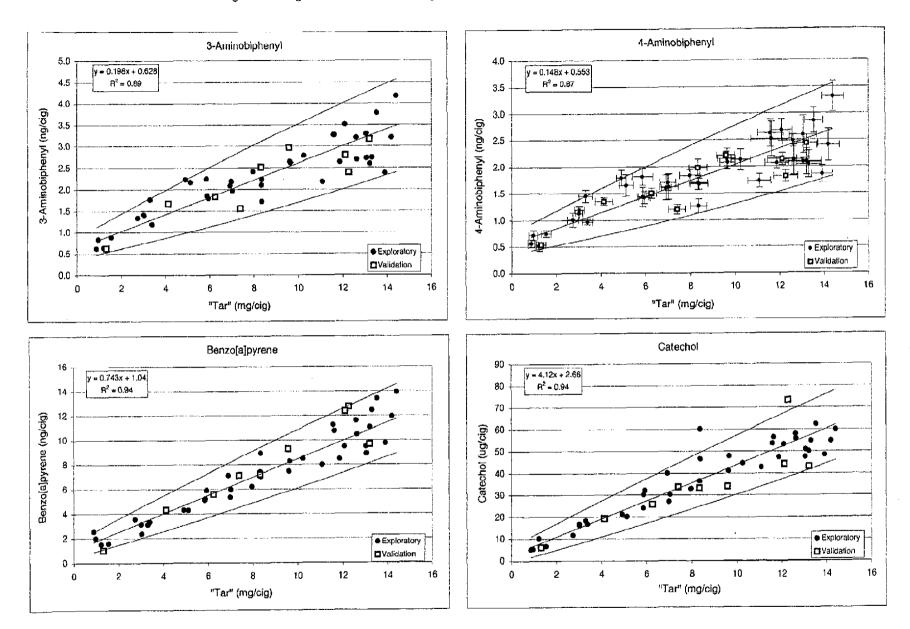
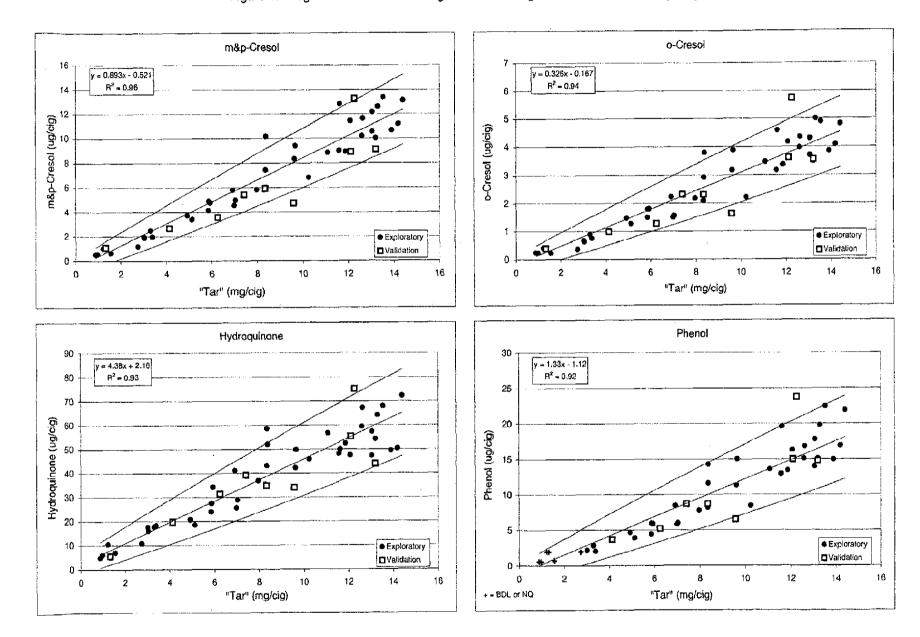


Figure 1: Regression Plots from Weighted Linear Regression with 1/"tar" Weighting



12/17/02

Benzene

50
45
40
40
9° 25
10
10
10
11
10
12
14
16

"Tar" (mg/cig)

Figure 2: Example Partitioning of Smoke Yields for Carbon Filter Design in Exploratory Brands

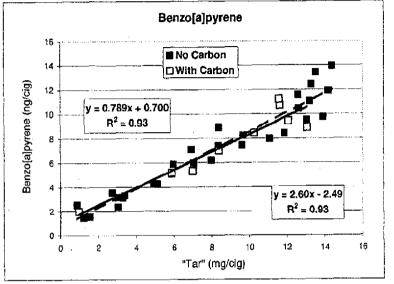


Table 7: Weighted Regression Statistics for Vapor Phase Smoke Constituents with "Tar" and Carbon Factor

Multiple is Regresson with X1 variable = ISO "tar" yield per cigarette and X2 variable = Dummy variable for carbon-in-filter

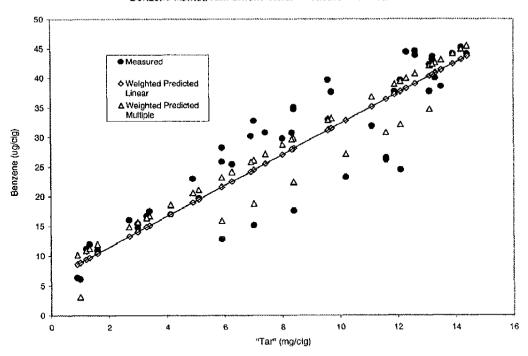
Linear is Regresson with X variable = SO "tar" yield per cigarette

Smoke	Wighted I	Multiple Lin	ear (1/tar)
Constituent		ith X1 and 2	X2
	$\mathbb{R}^2$	RMSE	PRESS
acetaldehyde	0.97	15.4	14689
acetone	0.95	9.2	6051
acrolein	0.95	1.8	250
butyraldehyde	0.94	1.3	162
crotonaldehyde	0.82	1.2	136
methyl ethyl ketone	0.93	2.7	621
propionaldehyde	0.95	1.7	219
acrylonitrile	0.94	0.4	10
benzene	0.93	1.4	163
1,3-butadiene	0.96	1.2	70
isoprene	0.93	13.3	9129
styrene	0.86	0.5	22
toluene	0.93	2.3	469
hyrdrogen cyanide	0.92	6.2	2835
mercury	0.95	0.1	0

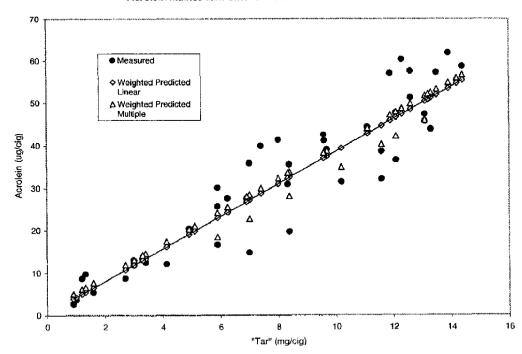
ĺ	Wighted	Simple Lin	ear (1/tar)
Ì		with X1	,
	$R^2$	RMSE	PRESS
	0.96	16.6	11852
	0.93	10.6	4799
	0.93	2.11	181
	0.91	1.53	96
	0.80	1.3	66
	0.89	3.2	417
ļ	0.94	1.9	155
	0.92	0.4	7
	0.86	2.0	173
	0.95	1.4	. 88
	0.91	15.8	10270
	0.80	0.6	14
	0.87	3.1	393
	0.91	6.5	1730
	0.91	0.1	0.4

Figure 3: Multiple Regression Examples with "Tar" and Carbon Factor

## Benzene Mainstream Smoke Yield: Measured vs Predicted



## Acrolein Mainstream Smoke Yield: Measured vs Predicted



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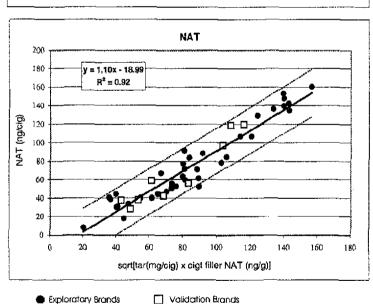
Table 8: Averaged Constituent Yields in Tobacco Filler

Sample Code	Nitra (mg/		NNI (ng/	-	NNI (ng/		NAE (ng/g		NA* (ng/)	
Exploratory	Average	SD	Average	SD	Average	SD	Average	SD	Average	SD
E1	7.84	1.09	1110	102	NQ	NQ	155	29	914.0	50.1
E2	8.71	1.26	2220	123	399.9	29.0	254	13	1646	76
E3	8.89	0.72	3736	243	1124	196	379	70	2945	145
E4	7.49	0.82	1188	168	NO	NQ	194	39	895.0	94.6
E5	9.83	1.07	2780	81	709.1	47.7	322	37	2106	105
E6	10.9	2.6	2736	38	860.3	154.3	262	21	2253	232
E7	9.27	0.26	1866	25	812.4	46.0	357	37	1559	44
E8	10.9	1.3	2354	118	1058	39	320	35	1786	126
E9	7.75	0.30	1273	47	DИ	NQ	221	19	1082	47
E10	8.98	0.52	2170	307	591.0	94.6	244	58	1339	129
E11	10.6	8.0	3769	84	1194	34	195	18	2883	90
E12	4.10	0.20	331.5	35.4	NQ	NQ	NQ.	NQ	423.1	37.8
E13	11.3	1.5	3892	281	1171	123	213	15	3139	210
E14	5.69	0.67	1355	81	445,3	23.7	NQ	NQ	1142	49
E15	9.59	0.16	2520	132	1060	82	156	9	1942	47
E16	9.45	0.11	3149	212	1165	48	172	33	2392	160
E17	10.5	1.1	2722	91	1116	105	188	7	2073	135
E18	8.26	1.16	2012	200	714.8	27.6	NQ	NQ	1562	187
E19	5.78	0.82	1361	61	469.0	56.5	NO	NQ	1207	176
<b>£2</b> 0	7.67	0.64	868.0	71.7	NQ	NQ	NQ	NQ	777.7	64.3
E21	10.5	1.4	3739	290	1127	49	255	12	2989	161
E22	6.75	0.56	919.2	160.4	427.2	44.1	NO	NQ	889.8	139.6
E23	5.49	0.81	996.4	79.0	423.1	59.9	NQ	NQ	958.8	61.0
E24	10.9	0.7	3302	38	1147	45	212	6	2477	78
E25	5.57	1.39	1094	37	NQ	NQ	NQ.	NQ	1014	34
E26	11.3	0.9	3438	142	1270	17	116	37	2676	53
E27	5.70	0.84	1216	76	474.4	40.4	NQ	NO	1092	30
E28	12.6	1.2	3350	159	922.8	87.6	176	12	2170	162
E29	10.4	1,1	2888	237	1193	68	207	8	2366	148
E30	9.14	0.16	2524	271	766.7	52.3	138	8	2171	100
E31	4.95	0.24	420.1	34.2	489.6	75.1	NQ	NQ	715.4	54.3
E32	6.86	0.20	1901	307	453.2	18.2	NQ	NQ	1482	238
E33	8.53	0.46	2353	189	811.0	58.0	150	17	2015	141
E34	7.01	0.36	1365	24	405.8	70.6	NQ	NQ	1060	15
€35	8.95	1.65	1430	187	675.0	29.3	NQ	NQ	1148	114
E36	10.6	8.0	3105	48	1189	185	186	18	2339	36 46
E37	7.09	1.22	1619	84	486.3	35.7	NO	NQ	1425	
E38	9.72	0.30	2223	192	433.5	18.9	NQ	NQ	1302	25
E39	8.77	0.32	1922	401	480.6	57.2	NQ	ИQ	1609	254
<u>Validation</u>		_							D700	
V1	7.88	0.65	3583	78	1042	153	215	19	2763	111
V2	8.12	0.81	320.6	36.1	382.4	46.5	NO	NQ	494.8	29.4
V3	6.06	0.81	1012	47	NQ cos r	NQ	NO	NQ	843.1	45.7
V4	8.32	1.26	2101	173	885.5	134.3	165	11	1714	93
V5	10.5	1.0	3938	275	1249	198	227	35	3102	132
V6	10.6	0.2	2360	185	1009	161	150	16	1784	127
V7	4.50	0.40	376.1	61.0	398.7	66.0	NQ	NQ	601.2	18.2
V8	7.00	0.49	1778	72	590.5	57.8	NQ	NQ	1244	56
V9	6.98	0.68	1171	151	358.1	41.0	158	31	911.7	113.3
<u>Reference</u>									1 4545	60-
R1	15.4	0.4	2433	268	973.2	35.9	177	33	1942	227
R2	16.2	1.4	2197	96	1020	72	173	25	1844	. 8

<sup>(1)</sup> BDL = below the detection limit, NQ = below the limit for quantitation
(2) Limits of quantitation (LOQ) for tobacco specific nitrosamines in tobacco: NNK LOQ = 272 ng/g, NAB LOQ = 103 ng/g, NAT LOQ = 213 ng/g

200

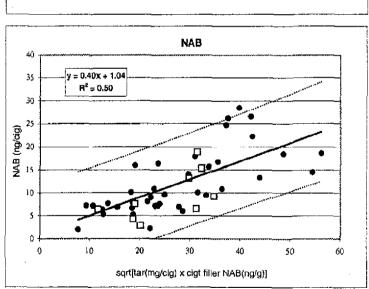
Figure 4: Prediction Models for ISO Mainstream Tobacco Specific Nitrosamine Yields



100

sqrt[tar(mg/cig) x cigt filler NNN (ng/g)]

150



60

sqrt[tar(mg/cig) x cigt filer NNK(ng/g)]

80

100

120

20

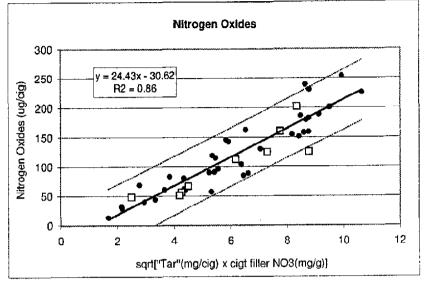
Nitric Oxide

300
250
y = 23.51x - 28.96
R2 = 0.85

150
0
0
2
4
6
8
10
12
sqrt["Tar"(mg/cig) x cigt filler NO3(mg/g)]

□ Validation Brands





Exploratory Brands

Table 9: Average Measured Yield Coefficient of Variation (%CV) and Absolute Relative Prediction Errors (ARPE) for Validation Br

		A	verage ARPE	(1)			Average	ARPE <sup>(1)</sup>
Smoke Constituent	Average % CV <sup>(2)</sup>	Linear with tar (weighted)	Multiple: tar and carbon factor (weighted)	Linear with (tar x Filler NO <sub>3</sub> ) <sup>0.5</sup>	Smoke Constituent	Average % CV <sup>(2)</sup>	Linear with tar (weighted)	Linear with (tar x Filler TSNA) <sup>0.5</sup>
acetaldehyde	10%	16%	15%		formaldehyde	15%	22%	
acetone	8%	12%	11%		ammonia	8%	19%	
acrolein	11%	18%	17%		1-aminonaphthalene	14%	15%	
butyraldehyde	11%	17%	15%		2-aminonaphthalene	12%	23%	
crotonaldehyde	13%	25%	25%		3-aminobiphenyl	8%	17%	
methyl ethyl ketone	9%	17%	15%		4-aminobiphenyl	6%	17%	
propionaldehyde	9%	14%	13%		benzo[a]pyrene	9%	20%	
acrylonitrile	7%	22%	19%		catechol	7%	18%	
benzene	5%	11%	7%		m & p-cresol	7%	29%	
1,3-butadiene	6%	16%	13%		o-cresol	8%	27%	
isoprene	6%	13%	10%		hydroquinone	7%	19%	
styrene	13%	22%	16%		phenol	8%	22%	
toluene	6%	15%	10%		resorcinol	7%	10%	
hydrogen cyanide	9%	21%	21%		pyridine	14%	21%	
mercury	9%	22%	19%		quinoline	9%	23%	
nitric oxide	11%	na		26%	NNN	11%	na	17%
nitrogen oxldes	10%	na		24%	NNK ·	14%	na	21%
			•	•	NAT	8%	na	17%
					NAB	16%	na	60%
					cadmium	10%	21%	
					lead	21%	15%	

<sup>(1)</sup> absolute relative prediction error = ((absolute prediction error)/measured yield)\*100

<sup>(2) %</sup>CV = (measured yield standard deviation/mean measured yield)\*100

Figure				Table 10: Variability of Analytical Methods with Time in the Analysis of 1R4F	. Varia	bility o	f Analy	tical Me	thods w	vith Tlm	e in the	Analys	is of 1R	4	ŀ			
Units   H   Sept-01   Oct-04   Internal   Sept-01   Oct-04   Internal   Sept-01   Oct-04   Internal   Sept-01   Oct-04   Internal   Sept-01   Se																		28%
March   24   March   24   March   25   Mar	Labetat Study #	Units	z	Şeb	8	ģ	8	Mar	<b>5</b>	May	ş	3	5	Means	SEM	X-56	95% CI	% of
mycles         2.0         6.0<	Genilestes			mean	×	mean	8	mean	8	mean	28	шевш	80			Uppper	Lower	
The color   The	JEI,	mafeia	8	95.6	0.42	867	0.34	9.14	0.36	8,92	0.37	9,18	0.31	9.10	0.34	9.76	8.44	7.2%
mgc/gg   200   12,04   0.15   11.5   11.5   0.15	nicotine	mg/cig	R	0.77	6.5	0.73	0.03	0.73	20.0	7.70	0.07	0.76	800	0.75	200	2	220	4 9%
Trigology   220   11/19   105   10   105   10   10   10   10	carbon monoxide	malcia	8	12.04	0.75	9:1	63	11.6	90	12.2	0.5	120	970	# # # #	620	12.45	130	4.9%
Miles   2.0   11.1   10.5   11.2   10.5	water	DIS/CIL	R	0.797	0210	0.822	0.097	0.671	0.134	0.839	0.195	0.840	0.220	0.808	0.087	0.979	0.837	27%
Marcial   20   1070   1071   128   128   17   128	MST SM	na/cia	ଛ	Ξ	0.5	10.2	0.3	5.01	979	10.5	0.4	10.9	0.4 4.0	10.66	0.34	= 3	666	9,3%
Width   7   288	cinarette weight	na/cio	ଷ	1070	5	1901	12	590	Ŧ	1065	12	1078	o,	1068	60	620	1057	 86:
ugode         7         588         47         612         43         574         57         518         43         53         518         43         53         518         43         53         54         57         500         64         441         43         48         31         52         23         31         56         53         34         58         46         46         41         43         48         35         36         56         56         47         56         58         56         441         57         400         58         56         441         57         400         58         56         441         53         443         58         441         58         443         58         441         58         441         58         441         58         441         58         441         58         441         58         441         58         441         441         483         48         58         56         441         58         441         58         441         58         441         58         441         58         441         58         441         58         441         58         441 <th>put count</th> <th>#Clg</th> <th>æ</th> <th>8.67</th> <th>0.27</th> <th>8.27</th> <th>0.28</th> <th>8.58</th> <th>0.26</th> <th>8.31</th> <th>0.25</th> <th>9.69</th> <th>0.18</th> <th>8.50</th> <th>0.20</th> <th>8.89</th> <th>B.12</th> <th>4.5%</th>	put count	#Clg	æ	8.67	0.27	8.27	0.28	8.58	0.26	8.31	0.25	9.69	0.18	8.50	0.20	8.89	B.12	4.5%
ugódo         7         288         47         512         25         265         34         525         35         35         36         47         304         47         304         47         304         47         304         47         304         48         345         34         355         34         45         366         36         34         45         364         45         440         450         460 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>,</th> <th>5</th> <th>5</th> <th>E C</th> <th>10</th> <th>000</th> <th>av.</th> <th>6AB</th> <th>920</th> <th>+ 80%</th>									,	5	5	E C	10	000	av.	6AB	920	+ 80%
ugicing         7         500         23         28         4.1         48.3         48         49         48	acetaldshyde	ng/clg	~	88	9	612	3	574	ð.	RIG	3.	8 8	öö	200	9 9	5 5	2 6	7 6
ugócia         7         50.0         4.6         4.1         4.8         3.6         5.5 </td <th>acelone</th> <td>ng/cig</td> <td>~</td> <td>8</td> <td>2</td> <td>288 289</td> <td>÷</td> <td>312</td> <td>Ħ</td> <td>707</td> <td>5</td> <td>8</td> <td>9</td> <td>8</td> <td>2 ¦</td> <td>i k</td> <td>3 6</td> <td></td>	acelone	ng/cig	~	8	2	288 289	÷	312	Ħ	707	5	8	9	8	2 ¦	i k	3 6	
ugócio         7         266.5         23         29.9         1.2         38.8         34.8         36.4         55.3         45.7         45.8         36.8         36.4         45.9         45.8         45.9         45	acrolein	ng/cig	~	20.0	4.6	46.1	Ŧ	46.3	8,	38.5	3.4	53.9	4.	47.0	, i		3 5	ž č
u gyéng         7         12.0         0.3         13.0         1.0         14.8         15.4         15.4         15.8         15.8         15.9         15.8         15.9         1	butyraldehyde	ug/cig	7	59.5	2.9	29.6	?	38.B	9	88	5.5	3	4.05	3	4 :	0.5	ğ:	5 6
a ujūcia         7         55.9         2.8         75.0         6.4         63.8         5.4         74.0         68.8         66.2         66.2         64.9         65.9         64.9         65.9         64.9         65.9         64.9         65.9         66.2         65.9         64.9         65.2         67.3         74.0         67.9         7.8         1.11         8.20         0.86         96.2         7.7         1.0         8.20         7.7         4.2         2.8         2.8         2.3         3.7         1.2         4.0         2.2         3.3         4.7         2.8         6.7         9.0         8.8         7.7         1.0 <t< td=""><th>crotonaldehyde</th><td>Dio/Din</td><td>7</td><td>12.0</td><td>60</td><td>13.0</td><td>0.1</td><td>14.9</td><td>1.5</td><td>15.4</td><td>5.</td><td>14.0</td><td>578</td><td>13.6</td><td>4:</td><td>200</td><td><u>.</u></td><td>Š</td></t<>	crotonaldehyde	Dio/Din	7	12.0	60	13.0	0.1	14.9	1.5	15.4	5.	14.0	578	13.6	4:	200	<u>.</u>	Š
ugicle         7         443         27         50.6         2.8         56.5         48.1         3.3         10.10         0.90         9.0         9.00         0.00<	methyl ethyl ketone	ua/cia	_	55.9	3	57.3	2.9	75.0	6.4	63.8	54	74.0	6.8	86.2	0.6	828	4 0	e N
opicity         7         9.06         0.68         7.76         1.11         6.30         0.68         7.76         1.11         6.30         0.68         7.76         1.11         6.30         0.22         2.3         4.01         0.90         8.88         9.90         4.21         2.2         3.3         4.0         9.8         9.0         2.2         3.3         4.0         9.0         9.0         2.2         3.3         4.0         2.2         3.3         4.0         2.2         3.3         4.0         9.0 <th>propionaldevde</th> <td>na/cia</td> <td>7</td> <td>49.3</td> <td>2.7</td> <td>50.6</td> <td>2.8</td> <td>629</td> <td>5.6</td> <td>48.1</td> <td>3.8</td> <td>46.3</td> <td>5.4</td> <td>50.1</td> <td>3.6</td> <td>57.2</td> <td>S) Gi</td> <td>4%</td>	propionaldevde	na/cia	7	49.3	2.7	50.6	2.8	629	5.6	48.1	3.8	46.3	5.4	50.1	3.6	57.2	S) Gi	4%
uploing         7         42.1         2.5         3.24         2.6         4.65         2.6         37.3         3.1         4.22         2.3         38.7         1.5         38.9         2.3         38.7         1.5         38.9         2.3         38.7         1.5         38.0         2.3         38.7         1.5         4.0         90.0	Accidentale	un/cia	_	90.6	0.88	7.78	Ξ.	8.30	0.80	9.16	0.53	10.10	080	9.88	0.89	10.6	7.	50%
upicing         7         447         32         337         117         428         33         390         23         384         15         400           upicing         7         77         77         0.06         16         397         17         22         36         16         397         17         38         18         47         56           upicing         7         77         17         0.06         16         397         17         21         384         18         70         17         18         47         56         70         17         11         10         10         17         11         10         10         17         11         10         10         17         11         10         10         17         11         10         10         17         11         10         10         17         11         10         17         11         10         17         11         10         10         17         11         10         17         11         10         10         17         11         10         10         10         11         10         10         11         10 <t< td=""><th>henzene</th><td>nofeio</td><td>_</td><td>45.1</td><td>2.5</td><td>32.4</td><td>2,8</td><td>40.5</td><td>2,6</td><td>37.3</td><td>53.1</td><td>42.2</td><td>2.3</td><td>38.9</td><td><del>4</del></td><td>47.0</td><td>30.8</td><td>%</td></t<>	henzene	nofeio	_	45.1	2.5	32.4	2,8	40.5	2,6	37.3	53.1	42.2	2.3	38.9	<del>4</del>	47.0	30.8	%
UpGing         7         386         21         366         16         397         19         342         27         344         18         359           UpGing         7         57.3         6.51         366         6.52         7.75         6.83         6.51         6.53         6.75 <th< td=""><th>1 3-historiene</th><td>io/cio</td><td></td><td>45.7</td><td>2</td><td>33.7</td><td>7.</td><td>42.8</td><td>es es</td><td>39.0</td><td>2.3</td><td>38.7</td><td>3.5</td><td>0.04</td><td>4.6</td><td>48.9</td><td>3.0</td><td>ž</td></th<>	1 3-historiene	io/cio		45.7	2	33.7	7.	42.8	es es	39.0	2.3	38.7	3.5	0.04	4.6	48.9	3.0	ž
ugicig         7         7,77         0.65         6.51         0.56         7,10         0.22         7,75         0.03         6.79         0.45         7,70           ugicig         7         7,77         0.65         6.51         0.56         7,10         0.22         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         7,70         0.05         0.05         7,70         0.05	o controls	infrin.		8	7	Š	4	397	61	섫	27	300	92	920	89	<del>2</del>	<b>58</b>	£
ugócig         7         67.3         4.7         55.7         4.8         66.2         5.0         61.2         5.4         66.5         4.7         65.9           ugócig         7         287         11         125         4         130         10         11         11         109         10 <t< td=""><th>sharene</th><td>no/cia</td><td></td><td>217</td><td>0.85</td><td>6.51</td><td>0.50</td><td>7.10</td><td>0.22</td><td>7.75</td><td>0.33</td><td>6.79</td><td>0.45</td><td>7.06</td><td>0.46</td><td>7.97</td><td>6.16</td><td>#3%</td></t<>	sharene	no/cia		217	0.85	6.51	0.50	7.10	0.22	7.75	0.33	6.79	0.45	7.06	0.46	7.97	6.16	#3%
ψόριφη 7 (178)         7 (178)         11 (125)         4 (130)         10 (121)         11 (125)         11 (125)         4 (130)         10 (121)         11 (125)         11 (125)         12 (126)	and in	nio/cin	. ~	67.9	7.	55.7	4	66.2	20	812	5.4	88.5	4.7	8.53	5.5	74.8	53.0	17%
ugicig         7         287         18         282         30         317         21         288         25         314         30         286           ugicig         7         531         18         281         32         317         21         288         25         312         37         308           ugicig         7         532         0.84         542         0.45         517         0.40         627         285         31         18         25         31         30         286         31         49         20         286         31         49         20         286         31         40         30         286         31         40         30         286         31         40         30         286         31         40         30	hydropen cyanide	un/cia	. ~	2	=	125	4	85	2	121	=	2	9	123	÷	£	8	14%
ugicia         7         311         18         291         32         331         22         284         22         296         25         312         37         37         30           ugicia         7         228         14         180         23         284         73         119         10         120         103         134           upicia         7         138         14         126         10         113         10         113         10         10         113         10         113         10         113         113         10         113         10         113         10         113         10         113         11         10         11         10         11         10         11         10         11         10         11         10         11         10         11         10         11         10         11         10         11	nitric existe	in/cla	_	282	82	282	30	317	7	82	£	<b>3</b> 4	8	98 7	4	Si Si	<b>5</b> 9	9.4%
op/cg         7         5.22         0.87         5.87         0.45         5.17         0.40         6.27         0.33         4.98         0.37         5.51           op/cg         7         2.28         1.4         18.6         2.3         28.4         7.3         19.3         18         17.9         3.0         20.8           op/cg         7         18.6         5.5         1.01         1.0         1.0         2.3         1.4         1.6         1.0         1.8         1.7         1.8         1.0         1.8         1.0	nitrocen oxides	na/cia		<u>=</u>	\$	8	83	E	ស	98	52	312	33	88	9	8	217	10%
upfolg         7         22.6         1.4         18.0         2.3         26.4         7.3         16.9         16.9         17.9         3.0         20.8           upfolg         7         18.6         5.5         14.2         10.0         18.4         0.5         14.1         10         12.9         10         13.4           upfolg         7         118         5.5         14.2         10.0         4.5         18.4         1.6         12.9         10.9         17.8           upfolg         7         118         5.5         14.2         0.1         11.9         3.0         0.9         17.8           upfolg         7         2.86         0.27         2.64         0.13         2.97         0.45         3.08         0.27         17.8           upfolg         7         2.86         0.47         2.97         0.45         2.97         0.44         2.97         0.44         1.73         0.44         0.45         3.0         3.44         0.77         1.84         0.45         3.0         3.44         0.77         2.88         0.17         1.13         0.70         0.74         0.70         0.74         0.70         0.74         <	mercury	Docio	۲	5.32	0.87	5.82	0.46	5.17	0.40	627	033	4.98	0.37	5.51	0.53	6.54	4.48	19%
up/cig         7         22.8         1.4         18.0         2.3         26.4         7.3         19.3         19.3         10.																		707.0
wyceg         7         18.6         5.5         1.0         13.4         0.5         14.1         10         13.4         1.6         13.4         1.6         13.9         1.6         13.9         1.6         13.4         1.6         13.9         1.6         13.4         1.6         1.6         1.6         2.3         11.7         0.6         1.1.3         1.6         1.6         1.6         2.3         1.7         0.6         1.7         0.9         1.7         1.1         0.0         2.3         1.7         0.6         1.7         0.6         1.7         1.7         0.6         1.7         0.6         1.7         1.7         0.6         1.7         0.6         1.7         1.7         1.7         0.6         1.7         1.7         1.7         0.6         1.7	formaldehyde	Blo/Gn	~	22.8	<u>-</u>	18.0	23	26.4	<u>د</u>	6.0	æ	6.7	30	508		D 4	2 9	\$ 3 5 .
op/eig         7         188         5.5         14.2         0.5         18.4         18.4         18.5         18.5         14.2         0.5         18.9         18.5         18.6         18.5         18.6         18.7         0.45         18.9         18.7         0.45         18.9         18.7         0.45         18.9         18.7         0.45         18.9         0.5         18.9         18.9         18.7         0.45         18.9         0.74         0.70         0.57         0.59         0.75         0.74         0.70         0.77         0.29         0.71         0.71         0.72         0.71         0.72         0.71         0.72         0.71         0.72         0.71         0.72         0.71         0.72         0.71         0.72         0.71         0.72         0.74         0.77         0.72         0.71         0.72         0.71         0.74         0.77         0.72         0.74         0.77         0.72         0.74         0.77         0.74         0.77         0.74         0.74         0.77         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74         0.74<	ammonia	Blo/Bn	7	13.8	1.4	12.6	1.0	13.4	6.5	14.1	9	12.9	0.	13,4	90	14.6	- i	\$ 3 66
ne         ng/eg         7         214         2.3         10.1         1.0         11.4         2.3         11.7         0.5         11.9         0.5         11.8         2.1         0.5         11.8         2.3         11.7         0.5         11.9         0.5         11.8         2.1         0.5         11.8         2.8         0.1         2.1         0.5         11.8         2.8         0.1         2.1         0.1         2.1         0.2         2.7         0.2         2.7         0.2         2.8         0.2         0.2         2.7         0.2         2.8         0.2         0.2         2.7         0.2         2.8         0.2         0.2         2.7         0.2         2.8         0.2	1-aminonaphthalene	ng/cig	7	18.5	5.5	14.2	970	20.0	£.	18.4	•	19.	6.0	17.6	7 6 64 6	21.5	() () ()	8 8 8 8
quene         7         2.18         0.27         2.54         0.18         2.97         0.45         3.08         0.10         2.77         0.27         2.77         0.27         2.78         0.27         0.27         0.27         2.77         0.27         2.77         0.27         2.77         0.27         2.77         0.27         2.77         0.27         2.78         0.03         1.73         0.13         0.29         2.83         0.17         2.79         0.04         0.20         3.77         0.17         2.79         0.04         0.20         3.77         0.17         2.79         0.04         0.20         3.73         0.17         2.79         0.04         0.20         3.77         0.17         2.79         0.04         0.20         0.29         3.83         0.07         7.29         0.04         0.05         0	2-aminonaphthalene	Blo/GL	~	11.9	23	10.1	0.	17.0	2.3	11.7	0.5	6.0	C C	13.3	89 8	P 2	n :	2 3
ngicig         7         6.243         2.01         0.13         2.39         0.034         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.011         2.01         0.014         0.02         0.023         0.01         2.02         94.3         0.03         0.03         0.03         0.03         0.03         0.03         0.03         0.04         0.04         2.02         94.3         0.08         30.2         1.02         4.03         0.04         0.04         0.04         2.02         94.3         0.08         30.2         1.02         4.03         30.0         0.04 <th>3-aminobiphenyl</th> <th>ng/cig</th> <th>۰.</th> <th>2.86</th> <th>027</th> <th>2.54</th> <th>0.19</th> <th>2.97</th> <th>0.45</th> <th>88</th> <th>070</th> <th>2.77</th> <th>7</th> <th>8</th> <th>0.21</th> <th>9</th> <th>9</th> <th>2.0</th>	3-aminobiphenyl	ng/cig	۰.	2.86	027	2.54	0.19	2.97	0.45	88	070	2.77	7	8	0.21	9	9	2.0
updage         7         6.86         0.45         7.33         1.39         6.74         0.70         7.26         0.84         0.85         0.75           updage         7         5.48         3.4         3.4         0.42         7.03         0.83         36.2         1.2         1.2         1.2         1.2         1.2         1.2         3.4         0.3         36.2         1.2         3.76         4.68         7.81         37.6         0.8         5.76         4.68         7.81         1.8         0.8         0.8         0.8         1.8         7.8         1.8         1.8         1.8         0.4         0.8         2.8         0.8         1.8         7.8         1.8         0.8         1.8         0.8 </th <th>4-aminobipheny</th> <th>ng/clg</th> <th>_</th> <th>2.13</th> <th>023</th> <th>2.01</th> <th><u>.</u></th> <th>230</th> <th>0.38</th> <th>233</th> <th>0.17</th> <th>2.10</th> <th>100</th> <th>17</th> <th>2 0</th> <th>1 2</th> <th>- 6 5 6</th> <th>2 2</th>	4-aminobipheny	ng/clg	_	2.13	023	2.01	<u>.</u>	230	0.38	233	0.17	2.10	100	17	2 0	1 2	- 6 5 6	2 2
uyloid         7         84.8         3.4         3.9         4.0         2.0         34.3         1.2         37.0         1.2         37.0         1.2         37.0         1.2         37.0         1.2         37.0         1.2         37.0         37.0         1.2         37.0         38.2         1.2         37.0         37.0         1.2         37.0	penzo[a]byrene	ng/cig	~	685	0.57	6,58	643	7.33	33	6.74	0.70	729	0.84 :	9 6	50.0	2	27.0	2
updage         7         83.4         0.53         8.73         0.73         8.44         0.42         7.03         0.39         2.39         0.73         3.84         0.42         7.03         0.39         2.39         0.35         2.39         0.33         3.29         0.39         3.79         0.39         3.79         0.39         0.79         2.3         38.4         0.39         3.79         0.39         3.79         0.39         3.79         0.39         3.79         0.39         3.79         0.39         3.79         0.39         3.79         3.89         0.35         0.87         0.39         0	catechol	ug/cig	~	<u>8</u>	-	39.8	6.	40.9	50	34.3	8.0	7 2	7 6	9,79	9 6	400	9 6	2 6
up/cig         7         3,54         0,34         3,27         0,15         3,59         0,29         2,88         0,15         2,89         2,88         2,88         2,81         4,33         3,70           up/cig         7         1,14         5,8         1,15         3,92         1,38         2,88         3,81         0,67         10,4           up/cig         7         1,21         2,1         10,9         0.7         11,2         0,5         4,66         0,60         0,60         0,60         0,67         10,4           up/cig         7         1,24         0,7         0,20         0,20         0,20         0,20         0,30         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,08         0,08         0,08         0,08         0,08         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,07         0,08         0,07         0,07         0,07         0,07         0,07         0,08         0,02         0,08	m & p-cresols	ng/cig	۷	B.34	66	8.23	0.73	8.43	0.42	2.03	0.39	101	6.68	18.7 0.83	7/2	7 6	200	2 2
ugodo         7         41,4         5,8         44,7         2.1         13,9         13,9         37,9         23,8         38,9         38,1         40,3         40,	o-cresoi	no/cig	~	2. 2.	0. 20.	3.22	0.15	3.50	0.29	2.88	CL.0	2.61	U.58	מינים מינים	45.0	ă i	3 5	2
ugode         7         12.1         2.1         10.9         0.7         11.3         0.5         988         0.05         NA         0.07           ugode         7         0.48         0.031         7.79         0.29         0.67         0.04         0.07         0.07           ugode         7         0.648         0.031         7.79         0.29         0.625         0.055         0.655         0.655         0.675         0.048         7.79           ugode         7         1.42.0         1.62         0.623         0.623         0.073         0.018         0.029         0.018         0.029         0.018         0.018         0.018         0.018         0.029         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018         0.018 </td <th>hydroquinone</th> <td>ng/cig</td> <td>~</td> <td>41.4</td> <td>9</td> <td>1</td> <td>2.</td> <td>30.5</td> <td>G,</td> <td>37.5</td> <td>2 2</td> <td>e e</td> <td>e i</td> <td>3 5</td> <td>e o</td> <td>9 0</td> <td>; ,</td> <td>2000</td>	hydroquinone	ng/cig	~	41.4	9	1	2.	30.5	G,	37.5	2 2	e e	e i	3 5	e o	9 0	; ,	2000
ugode         7         0.49         0.03         N.O.         0.085         0.076         0.036         0.076         0.036         0.077         0.036         0.03         0.026         0.026         0.026         0.076         0.036         0.077         0.036         0.077         0.036         0.076         0.036 </td <th>phenol</th> <td>og/csig</td> <td>7</td> <td>1.2.1</td> <td></td> <td>10.9</td> <td> O</td> <td>E.</td> <td>3</td> <td>3.55</td> <td>0.80</td> <td>25.5</td> <td>Ĝ</td> <td>5 6</td> <td>2 8</td> <td>2</td> <td>5 §</td> <td>2 702</td>	phenol	og/csig	7	1.2.1		10.9	 O	E.	3	3.55	0.80	25.5	Ĝ	5 6	2 8	2	5 §	2 702
up/ctg         7         6.88         U.31         7.79         0.33         0.02         0.03	resorcinol	Dio/Cid	_	0.43	200	2 ;	-	è è	9 6	0.80	0.030	2 6	0.48	3 5	0.70	0 13	90.5	3 8
updage         7         (3.33)         ULK2         ULK2 <t< td=""><th>pyridine</th><td>20/00</td><td>٠,</td><td>25 E</td><td>7</td><td>E .</td><td>8 3</td><td>20.00</td><td>e i</td><td>2 6</td><td>25</td><td>2 6</td><td>950</td><td>9.0</td><td>6</td><td>5 0</td><td>300</td><td>1 2</td></t<>	pyridine	20/00	٠,	25 E	7	E .	8 3	20.00	e i	2 6	25	2 6	950	9.0	6	5 0	300	1 2
Op/Org         7         119.6         15.2         10.4         15.4         10.4 <th< td=""><th>acilorine</th><td>50/55</td><td>٠,</td><td>ST 5</td><td>77.0</td><td>0.323</td><td>707.0</td><td>3 5</td><td>, y</td><td>5</td><td>2 5</td><td>100</td><td>9.0</td><td>1154</td><td>149</td><td>4</td><td><b>8</b></td><td>25%</td></th<>	acilorine	50/55	٠,	ST 5	77.0	0.323	707.0	3 5	, y	5	2 5	100	9.0	1154	149	4	<b>8</b>	25%
1,000,   1		o de	~ r	7.70	4.0	200	e ç	ž į	, 4	2 2	5 5	2 5	4 %	5	8.6	124	8 8	35%
Op/Eq.         7         77.2         8.6         24.1         2.9         25.3         3.1         21.8         2.1         202         2.2         25.7           Op/Eq.         7         37.2         8.6         24.1         2.9         25.3         3.1         21.8         2.1         202         2.2         25.7           Op/Eq.         7         35.5         1.9         36.9         2.7         13.2         1.9         36.2         4.9         66.3         4.9         64.4           Op/Eq.         7         10.2         7.7         10.2         7.7         10.2         10.2         36.7         10.2         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2         36.7         10.2	<b>S</b>			0 0	7 5	2 6	1,4,4 1,8	3 5	3 ~	5	÷ =	5	9	5	16	164	5	24%
Op/Eng         7         62.8         3.0         68.7         1.7         62.2         4.6         62.2         4.6         62.4         62.4         62.2         4.9         64.4<	<b>3 2</b>	200		3 6	2 00	24.5	3 6	, e	- E	7. 8.	- 7	20.2	22	25.7	6.7	38.9	12.6	51%
rigida         7         38.5         1.9         38.9         2.7         39.2         1.9         35.6         2.9         36.3         1.9         38.7           rigida         7         10.2         7.7         n/a         BDL         BDL         BDL         BDL         10.2           rigida         7         4.11         3.19         n/a         6.03         0.36         3.94         0.25         6.63         0.81         4.88           rigida         7         BDL         n/a         BDL         BDL         BDL         BDL         BDL	a in the second	5000	. ~	, e	30	98	4 60	68.7	1.7	62.2	4.6	62.3	6.4	64.4	28	20.0	89 89	8.8%
ηγόκος         7         102         7.7         n/a         BDL         BDL         BDL         BDL         BDL         102         7.7         6.79         3.31         n/a         BDL         BDL         BDL         BDL         6.79	Dad.	DO/CIO	. ~	35.5	1.9	38.9	2.7	38.2	6	35.6	5.9	E98	6; 2	36.7	3.	39.6	83.7	8.0%
마상다의 7 6.79 3.31 n/a BDL BDL BDL BDL 626 6.63 0.81 6.79 (2.64 0.65 0.65 0.81 6.79 0.79 0.79 0.79 0.79 0.79 0.79 0.79 0	chromium	Do/du	~	502	7.7	<b>6</b> /2		덞		ם		ద		10.2				
අතුරුදු 7 4,11 3.19 හැක 5.03 0.86 3.94 0.25 5.63 0.81 4.88 අතුරුදු 7 BDL හැක BDL BDL BDL BDL BDL	nickei	ngcio	^	6.79	33	2/3		덟		<u>8</u>		젊		6.78	;	;	•	•
ng/cig 7 BDL n/a BDL BDL BDL BDL	arsenic	rg/cig	~	4.11	3.19	ę,		3 3	0.86	. 39 1	0.25	20°	0.81	89. c	0.80	9 2	312	84.5
700	selentum	ng/cig	^-	릶		ę		료		崩		9	4	200	90.00	d :	95	1000

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Table 11: Mainstream Smoke Constituent Yields for a Commercial Brand Over a Nine-month Period

		Avg of	Std Error	95% Confide	nce Interval	+/- 95% Cl
Analysis	<u> </u>	Means	(SD of Means)	Lower	Upper	% of Mean
"tar"	mg/cig	6.1	0.2	5.8	6.5	6%
nicotine	mg/cig	0.53	0.01	0.51	0.55	4%
carbon Monoxide	mg/cig	7.4	0.4	6.7	8.1	10%
acetaldehyde	ug/cig	428	38.4	353	503	18%
acetone	ug/cig	248	24,5	200	296	19%
acrolein	ug/cig	44.9	4.7	35.7	54.2	21%
butyraldehyde	ug/cig	30.5	3.5	23.8	37.3	22%
crotonaldehyde	ug/cig	9.8	1.9	6.1	13.5	38%
methyl ethyl ketone	ug/cig	52.3	4.7	43.1	61.6	18%
propionaldeyde	ug/cig	34.6	3.5	27.9	41.4	20%
acrylonitrile	ug/cig	8.5	2.3	4.0	13.0	53%
benzene	ug/cig	29.7	4.0	21.9	37.4	26%
1,3-butadiene	ug/cig	30.1	3.3	23.6	36.6	22%
isoprene	ug/cig	272	30	212	331	22%
styrene (vapor phase)	ug/cig	1.98	0.64	0.7	3.2	63%
toluene	ug/cig	39.4	8.5	22.8	56.0	42%
formaldehyde	ug/cig	9.6	2.1	5.6	13.6	42%
benzo[a]pyrene	ng/cig	5.2	0.21	4.8	5.6	8%
benz[a]anthracene	ng/cig	9.5	0.67	8.2	10.9	14%
NNN	ng/cig	87.6	6.8	74.2	101	15%
NNK	ng/cig	65.6	8.5	49.0	82.2	25%
NAT	ng/cig	80.4	5.8	69.0	91.9	14%
NAB	ng/cig	9.5	0.83	7.9	11.1	17%

Avg for Constituents = +/- 26%

95% Confidence Interval = average of means +/- 1.96(std error)

Source: https://www.industrydocuments.ucsf.edu/docs/kxlx0001

Table 12: Comparison of Reported Kentucky Reference 1R4F Cigarette Mainstream Smoke Constituent Yields from Different Laboratories

Refernce		Contract Lab		(Gardner,	(Chepiga,	(LGC, 2000b,	Ratio Max
···		A	B	2000)	2000)_	2002a, b))	Min _
Smoke Method		ISO	FTC	FTC	FTC	ISO	
"tar"	mg/cig	9.14	10.02		8.70		1.15
nicotine	mg/cig	0.73	0.82		0.78		1.12
carbon monoxide	mg/cig	11.6	13.4		11.0		1.22
acetaldehyde	ug/cig	574	<b>67</b> 7	640	707		1.23
acetone	ug/cig	312	273	284	284		1.15
acrotein	ug/cig	46.3	65.5	65.0	59.7		1.42
butyraldehyde	ug/cig	38.8	33.3				1.16
crotonaldehyde	ug/cig	14.9	18.9				1.27
methyl ethyl ketone	ug/cig	75.0	95.1				1.27
propionaldehyde	ug/cig	55.9	57.0				1.02
acrylonitrile	ug/cig	8.30	10.7	13.9		14.2 ('02b)	1.71
benzene	ug/cig	40.5	47.8	44.2		27.3 ('02b)	1.75
1,3-butadiene	ug/cig	42.8	40.6	36.5		50.5 ('02b)	1.38
isoprene	ug/cig	397	418	366		225 ('02b)	1.85
styrene	ug/cig	7.10	7.35	000		0.76 ('02b)	9.67
toluene	ug/cig	65.2	89.1	73.3		37.96 ('02b)	2.34
hydrogen cyanide	ug/cig	130	122	165	144	0	1.35
nitric oxide	ug/cig	317	254			311 ('00b)	1.25
nitrogen oxides	ug/cig	331	20.	258	266	¥ ( · ( - + - )	1.28
mercury	ug/cig	5. <b>1</b> 7	4.61	200	200		1.12
formaldehyde	ug/cig	26.4	22.0	8.50	12.5		3.11
ammonia	ug/cig	13.4	11.9	16	18.8		1.58
1-aminonaphthalene	ng/cig	20.0	10.2	10	10.0		1.95
2-aminonaphthalene	ng/cig	11.9	6.59	10.9			1.80
3-aminohaphthalene	ng/cig	2.97	1.80	10.3			1.65
4-aminobiphenyl	ng/cig	2.30	1.43	4.0			2.79
benzo[a]pyrene	ng/cig	7.33	4.84	5.40	4.60	7.10 ('02a)	1.59
catechol	ug/cig	40.9	40.6	45.3	43.5	7.10 (SZa)	1.12
	ug/cig ug/cig	8.43	7.52	7.60	7.20		1.17
m & p-cresols o-cresol	ug/cig	3.50	3.04	7.00	7.2.0		1.15
	ug/cig ug/cig	39.2	35.5	42.9	39.8		1.13
hydroquinone	ug/cig ug/cig	39.2 11.3	10.5	8.90	9.60		1.26
phenol		0.86	0.48	0.50	9.00		1.77
resorcinol	ug/cig	8.02	4.07				1.97
pridine	ug/cig		0.21	0.23			1.33
quinoline	ug/cig	0.28 107	100	115	67.0		1.72
NNN	ng/cig	75.6	85.8	97.0	78.0		1.72
NNK	ng/cig	75,6 118	107	97.0 126	93.0		1.35
NAT	ng/cig		18.0	120	JJ.U		1.41
NAB	ng/cig	25.3	68.8 ·				1.00
cadmium	ng/cig	68.7 39.2	38.9				1.00
lead	ng/cig		38.9 5.96				1.28
arsenic	ng/cig	4.66				stituent range %	

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